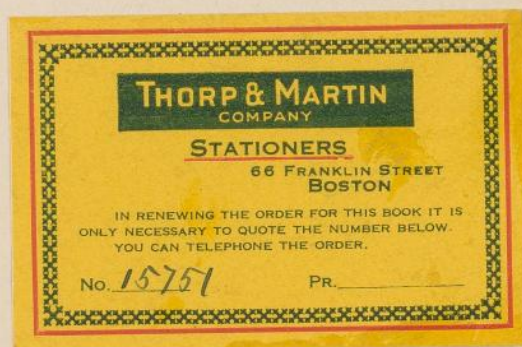


4



A

A

	0	1	2	3	4	5	6	7	8	9
10	.	.	.	.	.	.	.	.	.	.
20	0	.	.	.	.	.	.	.	.	.
30	0	.	.	.	.	.	.	.	.	0
40	.	.	.	.	.	.	.	.	.	.
50	.	.	.	.	.	.	.	0	.	.
60	.	.	.	.	.	0	0	.	.	.
70	.	.	0	.	.	.	0	0	0	.
80	.	.	0	.	0	.	.	0	0	.
90	.	0	.	.	0	.	.	0	.	.

marked on print of A/0126

0 not yet verified

def. or no variation
R already known
HMS has previous no.

A	100	.	.	.	0	.	.	.	.	.
110	.	0	.	.	.	.	.	0	.	.
120	.	.	.	.	.	.	.	.	.	.
130	.	0	.	.	0	.	.	0	.	.
140	.	0	.	.	.	.	.	.	.	.

1 2 3 4 5 6 7 8 9

101

0 1 2 3 4 5 6 7 8 9 10

6
8
4
7
5
4
3
2
1
0

A

background 100

MIT 30410

		λ	γ
Var	245	372	1365
a	251	942	1329
b	243		
c	234	88.5	1379
d	229		
e	218		
	27		

3	203	204					
4							
5	284						
6	259 λ		247	var	1321	1362	372
7	262			a	249	1308	935
8			245	b	233	1363	401
			233	c	228	1377	1075
9			232	d	228	1341	438
10	250		220	e	219	1290	434
11	237	170	27				
	66	34					

Henrietta L. Swape

January 1929

N W F 185

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Magnitude estimates

N W F 187

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New Variables

14
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4

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Magnitude estimates on early series for
long period variable of MWF 185

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" 12 on Estimates of GWSco + XZ Oph.

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Sequence MWF 187

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HR 4716 Nova B 297 magnitude estimates

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List of MF plates on MWF 187

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New Variables found on MWF 187
Previously published Vars. MWF 187

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Long Period Variables

MWF 185

HAS. var. No.	B plate limiting mag	B plate limiting mag	A plate 14x17	A plate 1162 8x10	M F plate 1928 var No	Miscellaneous B plate magnitudes 14.5	B plate
AD Sco	46, 48, 50	52, 54	56		62		
AG	38, 40	42			62		
BB	28, 12, 16	20, 22	24		62		
BC	28, 12, 16		24		62		
BD	28, 12, 16	20, 22	24		62		
BH	38, 40	42			62	1919 64 34, 36	
BI	38, 40	42			62		
CK ¹⁶³²²⁸	28, 12, 16	20, 22	24		62		
60	38, 40						
270	46, 48, 50	52, 54	56				
3	28, 12, 16		24		62		
5	28, 12, 16	20, 22	24		62		
8	20, 14, 18	20, 22	26	32	62	74	
14	38, 40				62		
15	38, 40	42					
17	30, 14, 18	20, 22	26, 32	32			
20	46, 48, 50		56		62		
21	46, 48, 50	52, 54	56		62		
22	46, 48, 50	52, 54	56		62		
62	28, 12, 16		24, 32	32	62	74	
66	46, 48, 50		56		62		
81	28, 12, 16	20, 22	24	32	62	74	
84	30, 14, 18		26	32	62	74	
85	30, 14, 18	20, 22	26	32	62	74	
88	38, 40	42			62		
91	38, 40				62		
93	38, 40				62		
94	46, 48, 50		56		62		
95	30, 14, 18		26		62		
97					62		
99	46, 48, 50	52, 54	56				

Complete
Index for

MWF 185

see

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4

	B	B	A	A	MF	Miscellaneous plates Magnitudes
	= 14.5	10.5-14.5	14x17	8x10	1928	
112	12					
114	28, 12, 16	20, 22	24	32	62	
120	30, 14, 18		26	32		74
123	38, 40				62	
140	28, 12, 16	20, 22	24		62	
144	30, 14, 18		26	32	62	
151	28, 12, 16		24, 32	32	62	
158	28, 12, 16	20, 22	24, 32	32	62	
159	38, 40	42			62	
160	38, 40				62	
162	38, 40			32	62	74
169	38, 40		32		62	
170	46, 48, 50	52, 54			62	
179	28, 12, 16	20, 22	24		62	1929 64
195	38, 40	42			62	
198	38, 40				62	
202	20, 14, 18	20, 22	26, 32	32	62	64
203	30, 14, 18		26 32	32	62	74
205	30, 14, 18	20, 22	26 32	32	62	64
207	46, 48, 50	52, 54	56	6		
225	46, 48, 50	52, 54	56			
257	28, 12, 16		24	32	62	74
259	46, 48, 50	52, 54	56		62	
263	38, 40			32	62	
264	38, 40	42		32	62	74
265	20, 14, 18	20, 22	26			74
296	28, 12, 16	20, 22	24, 32	32	62	
311	46, 48, 50		56	32	62	1929 64
325	38, 40	42	32		62	
335	28, 12, 16	20, 22	24		62	
337	28, 12, 16	20, 22	24		62	

H V

3910

	B = < 14.5	B 13.5-14.5	A 14x17	A 8x10	MF 1928	Miscellaneous plates Magnitudes
339	28, 14/18		24, 32	32	62	34, 36, 60
346	30, 14/18		26		62	
363	46, 48, 50	52, 54	56		62	
366	30, 14/18		26		62	
368	46, 48, 50	52, 54	56			
399	48, 48, 50		56	58		
404	30, 14/18		26			
405	46, 48, 50		56	58	62	
466	46, 48, 50		56	58	62	
507	30, 14/18		26	32		

AE

10

GWSco

78

X20pl

78

	B = < 14.5	B 13.5-14.5	A 14x17	A 8x10	MF 1928	Miscellaneous plate Magnitudes
339	28, 14/16		24, 32	32	62	34, 36, 60
346	30, 14/18		26		62	
363	46, 48, 50	52, 54	56		62	
366	30, 14/18		26		62	
368	46, 48, 50	52, 54	56			
399	46, 48, 50		56	58		
404	30, 14/18		26			
405	46, 48, 50		56	58	62	
466	46, 48, 50		56	58	62	
507	30, 14/18		26	32		

AE

10

GWSco

78

X20pl

78

12

B plates with limiting magnitude = 14.5 measured January 24, 1928

J D	Plate No	Limiting Magnitude	140	179	BC	BB*	CK	BD
24 11281.686	8 6073	14.7	ns < 14.0	13.0	ns < 14.0	ns < 14.0	ns < 14.0	ns < 14.0
12624	9561	14.0	15.0	13.2	15.0	13.8	15.6	14.0
12631.588	9595	15.8	14.2	12.6	15.0	13.9	15.6	off
12677.637	10060	14.8	ns	12.2	ns	ns	ns	ns
13290.765	12917	15.2	13.7	12.5	ns	ns	ns	ns < 14.4
13346.627	13490	15.0	ns	12.6	14.7	12.8	ns	ns < 14.0
13357.767	13741	15.0	ns	12.8	15.0	13.7	14.5	ns
13376.607	13867	15.4	15.1	12.8	15.0	15.4	ns < 15.0	ns
13409.572	14290	15.2	13.9	12.5	ns	ns	15.0	ns
13702.687	15943	15.4	15.3	13.1	ns	13.9	ns	ns
13709.757	15988	15.2	14.6	12.7	ns	13.3	15.3	ns
13730.641	16442	15.6	13.4	12.5	ns	13.6	15.5	ns
13758.712	16879	15.2	13.9	12.8	ns	ns	ns	ns
13797.602	17283	15.2	ns	12.6	ns	ns	ns	13.3
13833.530	17503	15.4	15.0	12.2	ns	ns	ns	14.6
14036.842	18882	15.5	15.5	13.4	ns	ns	14.4	ns
14055.837	19062	15.0	ns	12.8	ns	13.4	ns	ns
14070.203	19195	15.6	14.9	12.3	14.5	13.2	ns	ns
14084.677	19439	15.6	13.7	12.7	15.0	13.6	ns	15.5
14085.696	19481	15.2	—	12.9	ns < 14.5	13.8	ns	ns
14086.557	19506	15.2	13.8	12.9	14.4	14.2	ns	ns
14122.77	19841	15.2	ns < 14.5	13.3	ns	15.2	ns	ns
14189.516	20475	15.2	ns < 14.5	12.9	ns < 14.5	13.6	ns	ns
14392.885	21196	14.7	14.4	13.3	ns	14.7	ns	ns
14538.554	21926	14.7	ns	13.7	ns	ns	14.7	ns
14822.712	23052	15.2	ns	12.6	ns	15.0	14.7	ns
14844.623	23361	14.5	ns < 14.0	12.5	ns	ns	ns	ns
15158.747	25334	14.6	ns	12.6	ns	13.3	ns	ns
15168.765	25486	15.0	—	—	—	—	—	—
15268.577	26009	15.2	ns	13.1	ns	ns	15.0	ns

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335*	3	151*	337	5	296	158*	81	62	112	114*	257
?	ms<140	ms<140	ms<140	ms<140	ms<140	ms	ms	ms	ms	ms	ms
-	-	-	-	-	-	-	-	-	-	-	-
ms	ms	14.1	ms	ms	15.8	ms	ms	14.8	ms	ms	15.0
ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms
15.0	ms	15.4	ms	15.2	15.2	ms	ms	ms	ms	15.2	ms
ms	ms	14.9	14.8	ms	14.6	ms	ms	ms	ms	ms	ms
ms<14.5	ms<14.5	ms<14.5	13.9	ms<14.5	ms<14.5	15.0	ms	ms	-	ms<14.5	ms<14.5
ms	14.8	<u>14.3</u>	13.9	ms	15.4	14.2	ms	ms	ms	ms	ms
13.7	ms	ms	ms	ms	ms	ms	ms	ms	ms	15.2	ms
13.7	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms
14.2	ms	15.0	ms	ms	ms	ms	ms	15.2	-	ms	ms
ms	ms	15.4	ms	ms	15.6	15.4	ms	14.8	-	ms	ms
ms	ms	ms	ms	ms	15.2	ms	ms	ms	-	ms	ms
ms	ms	ms	13.9	13.8	ms	15.3	ms	ms	-	13.5	ms
13.1	ms	ms	ms	ms	ms	15.2	ms	14.5	-	ms	ms
ms	ms	15.5	15.5	ms	13.9	13.8	ms	15.6	-	13.7	13.9
ms	ms	ms	ms	15.2	14.7	14.5	ms	ms	-	13.6	ms
14.4	ms	ms	ms	ms	15.8	ms	ms	ms	-	14.6	ms
13.6	15.4	15.6	ms	ms	ms	ms	ms	15.0	-	14.0	ms
ms<14.5	ms<14.5	ms	edge	ms	ms	ms	ms	15.4	-	13.9	ms
13.9	ms	ms	ms	ms	ms	ms	ms	15.3	-	14.7	ms
ms<14.4	ms<14.4	-	-	-	-	-	-	-	-	-	-
ms	ms	ms<14.4	ms<14.4	ms<14.4	ms<14.4	ms<14.4	ms<14.4	ms<14.4	-	ms<14.4	ms<14.4
ms	ms	ms	13.5	14.6	ms	ms	ms	ms	-	ms	15.0?
ms	ms	ms	ms	ms	ms	ms	14.5	ms	-	ms	ms
ms	ms	all less	ms	ms	ms	ms	ms	ms	-	ms	ms
ms	-	-	-	-	-	-	-	-	-	-	-
14.9	ms	14.7	ms<15.0	ms	15.2	14.6	ms	13.0	ms	13.6	ms
-	-	12?	ms	ms	ms	ms	ms	ms	-	13.5	ms
ms	ms	ms	ms	14.0	ms	ms	13.7	ms	-	ms	ms

continued on page 16

B plates with limiting mag. = 14.5

	Plate No	Limiting Magnitude	339	404*	120	265	84	85 ^x
24 11881	B 6073	14.7	ns	ns	ns	ns	ns	ns
12631	9595	15.8	15.7	13.8	15.4	ns	15.7	15.8
12677	10060	14.8	ns	14.2	ns	ns	ns	ns
13290	12917	15.2	ns	13.7	ns	ns	ns	ns
13346	13490	15.0	ns	12.9	ns	ns	ns	15.0
13357	13741	14.0	ns	14.0	ns	ns	ns	ns
13376	13867	15.4	ns	15.0	ns	ns	ns	13.9
13409	14290	15.2	ns	ns	ns	ns	ns	15.2
13702	15943	15.4	15.4	ns	ns	ns	15.5	14.8
13709	15988	15.2	15.0	15.0	15.1	ns	ns	13.9
13730	16442	15.6	ns	ns	ns	ns	15.3	13.8
13758	16879	15.2	ns	ns	ns	ns	15.2	14.1
13797	17283	15.2	ns	ns	ns	ns	15.1	14.1
13833	17503	15.4	ns	ns	ns	ns	ns	13.4
14036	18882	15.5	14.6	ns	ns	ns	15.3	14.7
14055	19062	15.0	ns	ns	ns	ns	ns	14.0
14070	19195	15.6	ns	ns	ns	ns	15.4	13.8
14084	19439	15.6	ns	ns	14.8	ns	15.3	14.3
14085	19481	15.2	ns	ns	14.1	ns	15.3	13.9
14086	19506	15.2	15.4	ns	15.0	ns	ns	14.5
14189	20475	15.2	14.4	ns	ns	ns	ns	13.6
14392	21196	14.7	ns	ns	ns	ns	ns	14.2
14538	21926	14.7	ns	ns	ns	ns	ns	13.5
14822	23052	15.2	ns	ns	ns	ns	ns	ns
14844	23361	14.5	-	-	-	ns	ns	ns
15158	25334	14.6	15.0	ns	ns	ns	14.8	ns
15168	25486	15.0	15.0	ns	ns	ns	ns	ns
15268	26009	15.2	ns	ns	ns	13.2	ns	15.1

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144	203	507	202	17	97*	205	95	366	8	346
ns	ns	ns	13.2	ns	ns	14.1	ns	?	13.6	ns
ns	15.6	ns	14.0	15.8	ns	15.9	15.8	—	14.7	13.9
ns	ns	ns	14.8	ns	ns	ns	ns	13.3	ns	ns
ns	15.0	ns	15.0	ns	ns	ns	ns	ns	15.2	14.1
ns	ns	15.0	14.9	14.0	ns	14.9	ns	ns	15.0	ns
—	—	—	—	—	—	—	—	ns	15.0	ns
14.8	ns	ns	13.7	ns	ns	14.1	15.4	ns	14.7	ns
ns	ns	ns	ns	ns	ns	ns	15.2	—	ns	ns
ns	15.4	ns	15.3	15.0	ns	14.9	ns	13.3	14.0	ns
ns	ns	ns	14.4	15.2	<u>ns</u> <u>15.1</u>	15.1	ns	13.3	14.5	ns
ns	15.6	15.2	13.9	14.1	13.9	14.5	ns	13.7	14.9	ns
ns	15.2	ns	ns	ns	ns	ns	ns	ns	ns	15.0
ns	ns	ns	13.9	15.2	ns	14.5	ns	ns	ns	14.6
ns	ns	ns	15.0	ns	ns	13.9	ns	13.2	15.4	ns
ns	15.2	14.7	15.3	14.7	ns	14.1	ns	13.8	15.2	ns
ns	ns	15.0	13.5	13.6	ns	ns	ns	ns	ns	14.0
ns	ns	ns	15.5	14.2	ns	ns	ns	ns	14.1	15.0
ns	ns	15.6	14.3	14.0	ns	ns	ns	?	?	15.0
ns	ns	ns	13.8	14.4	ns	ns	ns	13.6	14.4	ns
ns	ns	ns	14.3	14.6	ns	ns	15.4	ns?	13.9	14.4
ns	ns	ns	ns	ns	<u>14.7</u> <u>15.0</u>	14.5	ns	?	ns	ns
ns	ns	ns	15.0	ns	ns	ns	ns	ns	14.0	ns
ns	ns	ns	ns	ns	14.7	15.0	ns	14.2	13.9	ns
ns	ns	ns	14.5	14.5	ns	ns	ns	ns	ns	ns
ns	ns	ns	13.5	ns	ns	ns	ns	ns	ns	ns
ns	ns	ns	15.0	ns	ns	ns	ns	ns	ns	ns
ns	ns	ns	13.6	15.0	ns	ns	ns	—	—	—
ns	ns	ns	14.2	ns	ns	13.8	ns	ns	14.7	ns

continued on page 18

	Plate No	Limiting Magnitude	140	179	BC	BB	163828	BP
24 15317.504	B 26481	15.6	ns	12.7	ns	ns	ns	13.9
15318.510	26489	15.6	ns	12.6	ns	ns	ns	13.0
15488.790	27174	15.8	14.9	12.7	ns	ns	ns	ns
15533.687	27480	15.2	15.2	13.2	15.2	13.5	ns	ns
15604.6	28159	14.7	ns	13.6	ns	ns	13.5	13.7
15605.569	28170	15.2	—	—	—	—	—	—
16295	32063	15.6	15.6	13.4	ns	14.2	15.3	15.0
16360.593	32582	14.7	13.9	13.7	ns	ns	ns	15.0
16376.528	32636	15.4	13.5 2 Br	13.3	—	—	—	—
16622.6410	33785	15.6	13.9	12.7	ns	14.8	15.5	ns
16625.672	33829	15.2	14.5	12.8	ns	15.4	ns	ns
16635.795	33965	15.2	ns	12.7	ns	14.7	14.8	ns
16639.616	34008	15.6	—	—	—	—	—	—
20329.655	44768	15.6	—	13.4	—	—	—	—
20337.6245	44846	15.6	14.8	12.5	15.3	ns	ns	ns
20340.586	44877	16.1	15.3	12.9	15.0	15.6? ns	15.7	ns
20352.609	44925	14.4	ns	13.0	—	—	—	—
20358.563	44956	14.4	—	—	ns	—	—	ns
20364.530	45009	15.2	ns	12.6	—	—	—	—
20366.5410	45018	15.2	ns	12.5	—	—	—	—
20365.529	45013	15.0	—	12.6	—	—	—	—

* 179 Br & hard to measure, even the same quality or size as sequence stars

* BB maybe close comp. which one would measure on plates that go very faint when BB is not seen

* 335 On plates where comparison stars are not distinct may measure these & not var (var in such cases not seen)

* 151 Has companion south & got confused with var

335	3	151	337	5	296	158	81	62	114	267	339
Be?	ns	Be?	ns	ns	ns	Be	Be	ns	ns	ns	ns
ns	Be?	Be?	ns	ns	ns	Be	13.7	ns	ns	ns	15.8:
13.5	ns	15.9	15.9	15.1	15.3	15.4	ns	15.5	ns	ns	14.8
ns	15.0	14.7	ns	ns	13.7	15.0	ns	15.0	ns	ns	15.3
Be?	ns	ns	ns	—	—	—	—	—	—	—	—
—	—	—	Be	—	—	ns	ns	ns	ns	Be	Be?
Be?	ns	Be?	Be	—	—	—	—	—	—	—	—
—	ns	ns	ns	14.7	ns	15.2	13.7	15.2	ns	ns	ns
13.8:	ns	ns	ns	13.7	13.5	15.0	13.7	14.1	ns	ns	14.0:
ns	ns	15.6	15.4	ns	15.7	15.5	ns	15.2	ns	15.0	15.6
ns	ns	ns	ns	ns	15.5	ns	ns	15.1	ns	15.4	ns
ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
—	—	—	15.2	ns	ns	15.2	ns	15.0:	ns	14.5:	ns
ns	15.5	?	15.2	13.8	13.6	15.0	ns	14.4	ns	ns	15.0
ns	14.7	15.6	14.8	13.5	13.5	15.3	ns	14.6	ns	ns	15.3
ns	14.9	15.9	14.8	13.5	13.9	15.7	ns	14.8	ns	ns	15.8
ns	14.4	ns	13.8	13.2	14.2	14.4	ns	14.8:	ns	ns	ns
—	—	—	—	—	—	—	ns	ns	ns	ns	ns
ns	14.7	ns	14.0	13.5	13.8	15.2	ns	14.2:	ns	ns	14.8:
ns	14.4	ns	13.8	13.6	13.9	15.2	ns	14.5:	ns	ns	14.2:
ns	13.9	ns	13.8	13.5	13.6	ns	ns	14.0	ns	ns	14.0

*158 May have medially faint companion which is measured when variable is really not seen

*114 Has close preceding comp. which may measure when variable is not seen.

	Plate No	Limiting Magnitude	404	120	265	84	85	144
15316	B 26471	15.2	—	ns	Br	ns	med Br	74.7
15317	26481	15.6	ns	ns	med Br	14.9	15.0	15.4
15318	26489	15.6	ns	ns	15.3	14.8	14.6	ns
15488	27174	15.8	ns	Br?	ns	15.8	15.8	ns
15533	27480	15.2	ns	ns	ns	15.3	ns	ns
1560 ⁵	28170	15.2	ns	ns	14.4	14.7	15.2	ns
16360	32582	14.7	ns	ns	ns	ns	ns	ns
16376	32636	15.4	ns	13.8	ns	15.0	13.8	ns
16622	33785	15.6	ns	14.9	ns	15.0	14.2	15.2
16625	33829	15.2	ns	15.1	ns	15.4	14.6	ns
16635	33965	15.2	ns	ns	ns	ns	15.0	ns
16639	34008	15.6	ns	15.4	15.6	15.3	15.0	15.2
20329	44768	15.6	15.0	ns	ns	15.1	15.4	ns
20337	44846	15.6	15.5	ns	ns	15.1	15.6	ns
20340	44877	16.1	15.6	ns	15.2	15.5	ns	ns
20352	44925	14.4	ns	ns	14.0	ns	ns	ns
20358	44956	14.4	ns	ns	13.9	ns	ns	ns
20364	45009	15.2	ns	ns	13.8	15.2	15.4	ns
20366	45018	15.2	ns	ns	14.2	15.2	15.0	ns
20365	45013	15.0	ns	ns	14.0	ns 15	14.7	ns 15

* 404 cannot distinguish on B plate too faint & too close

* 85 may have measured one of its companions if variable is not seen if plate does not show faint stars distinctly.

* 97 Has close companion

203	507	202	17	97	205	95	166	8	346
ns	ns	ns	ns	ns	14.5 15.0	ns	12	-	-
ns	15.5	ns	ns	ns	ns	ns	13.2	15.7	ns
ns	15.5	ns	ns	ns	15.4	ns	13.1	15.3	ns
15.6	15.8	15.4	ns	ns	ns	ns	12	14.9	ns
ns	ns	ns	ns	ns	ns	ns	14	15.4	ns
15.0	?	13.7	13.0	13.7	13.8	ns	14.0	15.4	ns
ns	15.2	14.9	ns	ns	15.0	ns	14	15.0	14.1
15.2	14.5	13.5	14.7	ns	13.7	ns	12	14.8	13.9
15.1	15.6	13.9	15.6	ns	15.7	ns	12	15.2	ns
ns	ns	14.5	ns	ns	15.1	ns	med	15.3	ns
ns	ns	ns	ns	ns	15.2	ns	13.3	ns	ns
15.5	15.8	14.9	ns	ns	15.2	ns	12	15.6	ns
14.7	15.0	13.8	ns	ns	14.1	ns	12	14.2	ns
14.6	15.0	15.3	ns	ns	14.5	ns	med	14.7	ns
15.4	15.5	15.5	ns	ns	15.2	ns	13.5	14.8	ns
ns	ns	ns	ns	ns	13.8	ns	-	ns	ns
ns	ns	ns	ns	ns	13.7	ns	ns	ns	ns
15.4	15.2	14.7	15.6	ns	14.0	ns	?	15.4	ns
15.4	15.0	14.5	ns	ns	13.9	ns	-	15.4	ns
14.8	15.0	14.5	15.0	ns	13.9	ns	15	15.4	ns

B plates Limiting magnitude bet. 13.5 & 14.5

	Plate No	Limiting magnitude	140	179	BB	163826	B D	385
24. 11206.	B 3875	13.9	—	—	ns	14.0	ns	—
12286.820	7693	13.9	13.8	12.5	ns	ns	ns	ns
12677.629	10059	14.1	14.2	13.1	ns	ns	ns	ns
13325.820	13311	14.1	ns	12.8	14.1	ns	ns	—
13325.828	13312	14.4	ns	13.2	14.3	ns	ns	ns
#3 B 13383.710	13987	14.0	—	—	—	—	—	—
13444.513	14542	14.0	ns	12.6	ns	ns	ns	ns
13621.806	15375	14.2	14.0	12.9	ns	13.4	ns	ns
13661.737	15589	13.8	ns	12.5	ns	ns	ns	ns
13663.869	15607	14.4	ns	12.6	ns	14.2	ns	ns
13714.736	16095	13.8	ns	12.7	13.7	ns	ns	ns
13743.751	16615	13.8	14.0	12.5	ns	ns	ns	ns
13779.571	17076	14.0	ns	13.8	ns	ns	14.2	ns
13782.	17087	14.0	—	—	—	—	—	—
#62 14.4 13954.898	18438	14.4	14.7	12.6	ns	ns	ns	13.2
#62 14.4 13990.860	18592	13.9	14.0	12.7	ns	ns	ns	14.4
14013.887	18713	13.8	ns	12.8	ns	ns	ns	ns
14022.846	18771	14.0	ns	13.3	ns	ns	ns	ns
14067.774	19162	14.0	14.0	12.5	13.2	ns	14.0	14.0
14107.7307	19684	13.8	ns 13.8	12.7	ns	ns	ns	ns
14751.792	22506	13.6	ns	13.1	ns	—	—	13.8
15310.501	26436	off	—	—	—	—	—	—
15310.501	26455	14.0	—	—	—	—	—	—
15577.617	27851	14.0	ns	13.4	ns	14.7	14.9	—
15623.565	28356	13.8	—	—	—	ns	13.9	—
16282.638	32605	14.0	—	—	—	—	—	—
16626.695	33857	13.8	—	—	—	—	—	—
16941.818	35763	14.0	—	Bu	ns	ns	ns	—

continued on page 22

337	5	296	158	81	114	265	85	202	17	205	8
—	—	—	—	—	—	—	ns	—	—	—	ns
ms	ms	ms	14.2	ms	14.2	ms	ms	ms	?	ms	ms
ms	ms	ms	14.1	ms	ms	ms	14.0	ms	ms	ms	ms
ms	ms	13.9	14.2	ms	ms	14.0	ms	ms	14.0	14.0	ms
ms	ms	14.0	ms	ms	ms	13.8	ms	14.3	14.5	ms	ms
—	13.7	13.7	ms	ms	ms	ms	14.0	13.7	ms	13.6	ms
ms	14.0	14.0	ms	ms	ms	ms	ms	ms	ms	ms	13.5
ms	ms	ms	ms	ms	ms	ms	ms	14.2	ms	ms	ms
ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	10.8
ms	ms	14.7	ms	ms	ms	ms	ms	ms	ms	ms	13.7
ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms
ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms
14.0	ms	ms	ms	ms	—	—	—	—	—	—	—
—	—	—	—	ms	14.0	—	—	ms	ms	ms	ms
14.7	14.2	ms	ms	ms	14.7	ms	13.8	14.0	ms	13.9	14.0
13.6	13.9	ms	14.4	ms	14.4	ms	ms	13.8	ms	13.5	14.5
ms	ms	ms	ms	ms	ms	ms	ms	—	—	—	ms
ms	ms	ms	13.9	ms	ms	ms	ms	14.0	ms	14.0	ms
ms	ms	14.2	ms	ms	13.8	ms	14.0	14.0	—	—	ms
ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	ms	13.7
ms	ms	ms	ms	ms	ms	ms	—	—	—	—	ms
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	ms	13.7	13.7	14.0	ms	14.4	ms
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	14.0	13.7	13.7
—	—	—	—	—	—	ms	13.9	13.8	ms	ms	13.8
—	—	—	—	—	—	ms	13.6	14.1	ms	ms	ms
—	—	—	—	—	—	—	—	13.6	—	—	ms

		Rate No	Limiting Magnitude	140	179	80	163820	00	335
24	17069.699	036618	13.9	13.9	13.2	ms	14.0	ms	ms
	17098.561	36954	13.6	ms	12.9	ms	ms	ms	13.8
	20299.	44596	14.0	13.8	12.7	14.9	ms	ms	13.7
	20339.575	44868	14.0	—	—	—	—	—	—
copied in 45013 the 14.0 list of B plates									
	21004.666	47484	14.4	14.6	13.6	ms	ms	ms	14.3
	21731.	52854	13.8	ms	12.6	13.1 ^{def}	ms	13.0	ms
	21732. 36	52891	14.0	ms	12.5	13.2	ms	13.0	ms
	13684.	15703	14.0	ms	13.0	ms	ms	ms	13.5
	14181	20284	14.0	—	—	—	—	—	—
	14804	22926	14.0	ms	12.6	13.5	13.3	ms	15.0
	14885	23923	14.5	ms	12.7	ms	ms	14.5	—
	14892	24006	14.0	—	—	—	—	—	—
	15120	25079	13.5	—	—	—	—	—	—
	15121	25115	14.6	ms	—	14.0	ms	ms	—
	15148	25261	14.0	14.4	12.5	13.7	ms	ms	ms
	15486	27149	14.0	—	—	ms	ms	ms	—
	15544	27626	14.2	13.7	13.0	13.9	ms	ms	ms
662 14.8 257 15.0 229mcl15.2	15868	29472	15.2	15.1	12.9	ms	ms	13.1	13.7
	16289	32040	14.5	ms	13.1	14.0	14.5	15.0	13.5
	16361	32617	14.0	—	—	ms	scattered	ms	—
	17094	36890	13.6	—	—	ms	ms	ms	ms
	19176	43302	13.8	ms	13.1	13.8	ms	ms	—
	20023	44214	13.6	ms	12.5	ms	ms	ms	ms
	20300	44615	14.4	14.0	12.6	14.4	ms	ms	14.3
	20330	44780	14.4	14.5	13.0	ms	ms	ms	ms
	20336	44828	14.4	13.1	13.1	ms	ms	ms	14.7
	20348	44916	13.9	ms	12.5	ms	ms	ms	ms
	20713	45425	14.4	ms	12.8	ms	ms	ms	13.7
	21331	49905	—	—	—	—	—	—	—
	21750	52977	13.8	ms	13.5	ms	ms	13.1	ms
	21751	53008	13.8	ms	13.3	13.7	ms	12.8	ms

337	5	296	158	81	114	265	85	202	17	205	8
13.9	14.0	14.2	ns	14.2	13.8	ns	13.9	ns	14.0	14.0	ns
ns	14.0	ns	14.0	ns	13.9	ns	ns	-	-	-	ns
ns	defa Bri	ns	ns	ns	ns	ns	14.0	13.7	ns	ns	13.5
-	-	-	-	-	-	ns	ns	14.4	ns	13.7	ns
13.8	13.5	13.6	ns	ns	ns	14.0	14.7	14.5	15.0	13.9	ns
ns	ns	ns	ns	ns	13.9	ns	?	14.7	ns	14.6	ns
ns	ns	ns	ns	ns	ns	-	-	-	-	13.5	ns
ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	14.1
ns	ns	ns	ns	ns	Bri	ns	ns	ns	ns	Bri	ns
ns	-	-	ns	ns	ns	ns	14.0	13.8	ns	Bri	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
ns	ns	ns	14.0	ns	13.8	ns	14.0	14.2	ns	ns	-
-	-	-	-	-	-	ns	ns	ns	ns	14.0	-
-	-	-	-	-	-	-	-	-	-	-	-
ns 14.5	ns 14.5	ns 14.5	14.2	ns 14.5	13.6	ns	14.4	14.3	ns	14.4	14.4
-	-	-	-	-	-	-	-	-	-	-	-
14.0	ns	Bri	Bri	ns	-	-	-	-	-	-	-
15.0	ns	ns	ns	ns	ns	14.2	ns	14.2	ns 14.4	ns 14	13.8
14.2	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
14.0	14.2	ns	14.0	ns	ns	ns	14.2	-	-	-	ns
-	-	-	-	-	-	-	-	-	-	-	-
ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	13.7	ns
ns	ns	ns	ns	ns	ns	ns	13.9	13.8	ns	ns	13.6
ns	ns	ns	ns	ns	ns	ns	ns	14.0	ns	ns	14.6
ns	14.4	ns	ns	ns	ns	ns	ns	14.7	ns	ns	ns
14.0	13.7	13.9	ns	ns	ns	13.9	ns	ns	-	-	ns
ns	13.4	ns	ns	ns	ns	ns	ns	ns	ns	14.1	13.9
ns	14.0	ns	ns	ns	ns	ns	ns	13.7	ns	13.4	ns
ns	-	-	-	-	-	-	-	-	-	-	ns
ns	ns	ns	ns	ns	ns	ns	13.8	ns	ns	ns	ns

24

A plates

	Plate No	Limiting Magnitude	140	179	AC	BB	163828	BD
2414107.694	A 2520	—	—	—	—	14.0	15.8	13.8
14212.533	2826	16.5	—	—	15.4	15.5	13.7	ms
14510.644	3221	13.4	—	—	—	—	—	—
15632.893	5625	16.0	—	—	ms	ms	13.9	13.9
15638.668	5642	16.5	—	—	ms	ms	13.6	13.9
15667.	5708	16.0	—	—	sun?	ms	15.0	14.3
16345	6507	16.5	—	—	—	—	15.5?	ms
16346.487	6509	16.3	—	—	ms	ms	match ms	ms
18470.750	9362	15.8	13.9	12.4	14.4	13.9	13.5	ms
18794.871	10052	16.5	—	—	ms	14.0	14.0	ms
18835.743	10121	15.5	—	—	ms	ms	ms	ms
18879.644	10202	16.0	—	—	—	—	—	—
18882.612	10207	16.7	ms	12.9	15.4	15.7	15.5	ms
18907.550	10238	—	—	—	—	—	—	—
23563	12383	16.6	14.8	12.5	13.9	13.1	13.3	13.5
23577	⁴¹⁷ 12383	16.5	15.9	12.6	13.9	13.7	13.3	13.3
23581	12427	16.5	16.3	12.7	14.7	14.0	13.9	13.9
23604	⁸⁵ 12427	16.6	16.5	13.5	15.8	15.4	14.9	14.2
23644	⁵⁸⁰ 12485	16.6	13.9	12.6	16.5	16.0	16.3	15.9
24024	¹³⁰⁷⁰ 12580	16.6	—	—	—	—	—	ms
24025	¹³ 13078	16.6	—	—	—	—	—	ms
	13078	—	—	—	—	—	—	—

A plates

	Plate No	Limiting Magnitude	404	120	265	84	85	144
24 14107	A 2520	—	—	—	—	—	—	—
14212	A 2826	16.5	—	ms	16.3	15.3	14.8	ms
14510	3221	15.4	—	—	—	—	—	—
15632	5625	16.0	—	ms	ms	15.3	16.0	ms
15638	5642	16.5	—	ms	ms	15.5	16.3	ms
15667	5708	16.0	—	ms	ms	16.0	13.9	ms
16345	6507	16.5	—	—	—	15.4	11?	irratish
16346	6509	16.3	—	ms	ms	15.4	16.0	15.6
18470	9362	15.8	—	—	ms	15.3	14.7	—
18794	10052	16.5	—	ms	ms	15.9	13.9	16.3:
18830	10121	15.8	—	ms	ms	15.4	15.0	ms
18879	10202	16.0	—	14.7	ms	14.4	14.0	ms
18882	10207	16.7	16.6	15.2	16.7	14.6	14.0	ms
18907	10238	16.5	—	15.0	ms	15.6	13.9	ms
23563	12383	do not show these variables						
23577	12417							
23581	12427							
23604	12485							
23644	12580							
24024	13070	16.6	—	—	—	—	—	—
24025	13073	16.6	—	—	—	—	—	—

203	507	202	17	97	205	95	366	8	346
ns	15.2	15.0	15.7	15.4	15.7	ns	7	15.4	ns
15.3	15.3	15.7	ns	15.5	15.4	ns	12	14.6	ns
15.0	15.2	15.5	ns	15.8	15.6	ns	12	13.9	ns
15.5	ns	15.6	ns	ns	15.5	ns	ns	14.0	ns
—	14.7	15.9	14.2	ns	14.4	15.8	12	14.2	15.1 15.8
15.2	15.0	15.6	13.9	ns	15.1	15.6	13.8	15.2	15.7
75	—	—	—	—	—	—	ft	15.0	ns
15.3	15.6	15.1	15.5	ns	14.9	ns	12	15.0	ns
15.0	15.8	14.4	ns	15.8	15.7	ns	13.9	15.7	ns
ns	15.2	16.0	ns	ns	14.5	15.0	med	ft	ns
ns	15.6	16.7	ns	15.1	15.4	15.6	ns	15.6	ns
16.2	15.0	13.7	15.7	15.6	14.0	16.0	ns	med	—

14.2 15.3 ns

14.2 15.1 ns

B plates with limiting magnitude = $[14.5]$ (additional plate)

		Plate No	Limiting Magnitude	140	179	BC	BB	16828	BD
24	13348	B 13532	14.5	—	—	—	—	—	—
	13383	13983	15.2	13.9	12.6	ns	14.5	14.9	ns
	14181	20281	15.2	14.0	12.9	ns	ns	ns	ns
	15115	25464	15.0	ns 15.0	Br	ns	—	—	ns
	15557	27720	15.2	13.5	12.6	ns	14.4	ns	ns
	15973	30533	15.0	—	12.7	ns	ns	ns	15.0
	16221	31430	14.7	ns	13.2	ns	ns	13.5	13.6
	16320	32317	15.8	15.7	12.6	15.9	ns	ns	ns
	16606	33652	14.7	—	Br	ns	ns	ns	ns
	16620	33774	16.1	14.0	12.4	ns	15.4	15.7	ns
	16668	34295	16.1	ns	13.9	16.0	15.5	ns	ns
	19547	43121	14.5	—	12.5	ns	13.2	ns	13.9
	20288	44531	15.2	15.2	12.6	ns	14.2	ns	ns
	20313	44671	15.2	13.9	13.1	ns	15.2	ns	ns
	20315	44707	15.2	13.5	12.7	15.0	15.2	15.3	ns
	20325	44742	16.3	13.8	13.5	14.7	15.6	ns	ns
	20328	44753	16.3	14.5	13.3	14.2	14.8	15.3	ns
	20329	44765	15.2	14.4	13.2	14.5	ns	ns	ns
	21047	47756	14.7	—	Br	14.0	ns	ns	ns

335	3	151	337	5	296	158	81	62	114	257	339
—	ns	—	ns	ns	14.0	ns	ns	ns	ns	ns	ns
ns	ns	15.1	15.2	ns	ns	ns	ns	ns	ns	ns	ns
ns	14.6	ns	15.0	13.8	ns	ns	ns	ns	ns	ns	ns
ns	15.0	ns	ns	ns	ns	ns	ns	ns	13.7	ns	ns
ns	13.8	15.0	15.4	ns	ns	13.8	ns	ns	ns	ns	14.4
—	—	—	—	—	—	ns	Br?	ns	—	—	—
ns	ns	ns	14.5	ns	ns	ns	ns	ns	ns	14.4	ns
14.5	15.8	15.0	15.9	15.3	15.5	15.7	13.3	ns	ns	ns	15.3
ns	—	—	—	—	—	ns	ns	ns	—	—	—
ns	ns	15.7	14.9	16.0	15.8	16.1	ns	15.0	ns	13.9	15.5
ns	ns	15.4	15.5	15.6	14.7	14.8	15.5	15.0	ns	15.3	15.2
ns	14	ns	14	ns	14	ns	14	ns	14	ns	14
13.9	ns	ns	ns	ns	ns	ns	15.3	ns	ns	ns	ns
ns	ns	15.1	ns	15.0	ns	ns	ns	15.2	ns	ns	ns
ns	ns	ns	ns	ns	ns	ns	ns	ns	—	—	—
15.3	15.5	15.6	15.0	13.9	14.2	ns	ns	15.3	ns	ns	15.5
15.4	15.2	ns	15.6	14.0	13.9	ns	ns	15.0	ns	ns	15.8
ns	ns	ns	ns	13.8	13.8	ns	ns	14.5	ns	ns	ns
ns	14.0	ns	ns	ns	14.0	ns	ns	ns	ns	ns	ns

Limiting mag. varies according to what part of the
plate is being measured - hence some of the
discrepancies in the limiting column + the preceding page

	Plate No	Limiting magnitude	404	120	265	24	85	144
24 13 348	B 13532	14.7	ns	ns	14.0	ns	ns	ns
13383	13983	15.2	ns	ns	ns	ns	14.2	ns
14181	20281	15.2	ns	ns	14.4	ns 13.3	13.3	15.0
15145	25464	15.6	ns	ns	15.6	15.5	15.4	ns
15557	27720	15.2	ns	ns	15.0	15.2	15.2	ns
15973	30533	15.0	—	—	ns	ns	ns	ns
16221	31430	14.7	ns	ns	ns	ns	14.6	ns
16320	32317	15.8	15.1	ns	ns	14.6	16.0	15.4
16606	33652	14.7	—	—	ns	ns	13.6	—
16620	33774	16.1	ns	14.7	ns	15.0	13.9	ns
16668	34295	16.1	15.0	ns	15.0	15.4	16.1	ns
19547	43121	14.5	ns(14)	ns(14)	ns	ns	ns	—
20288	44531	15.2	ns	ns	ns	14.6	13.4	ns
20318	44671	15.2	Br	ns	ns	ns	15.0	ns
20315	44707	15.2	Br	ns	ns	ns	15.0	ns
20325	44742	16.3	med	ns	ns	15.3	15.5	ns
20328	44763	16.3	15.4	ns	ns	15.2	15.7	ns
20329	44765	15.2	ns	ns	ns	ns	15.2 13.8	ns
21047	47766	14.7	ns	ns	ns	ns	ns	ns

202	507	202	17	97	205	95	366	8	346
14.4	ms	ms	14.5	ms	13.7	ms	—	—	—
ms	ms	13.6	ms	ms	13.8	15.0	ft	14.5	ms
ms	15.2	14.9	ms	14.1	13.7	15.3	ft	15.4	ms
ms	ms	13.7	14.8	15.0	15.1	14.9	Br	15.4	ms
ms	ms	ms	ms	?	Br	ms	ft	15.4	ms
ms	15.0 Br?	ms	15.0	ms	—	ms	med	15.1	ms
ms	ms	14.6	ms	ms	13.3	ms	Br	ms	ms
15.0	?	ms	13.9	15.6	16.0	15.0	Br	14.2	ms
ms	ms	14.0	—	—	—	ms	med	ms	ms
14.9	15.7	13.9	ms	ms	16.0	ms	ft	15.3	ms
16.5	ms	15.5	ms	ms	14.5	ms	Br	16.1	15.3
—	—	ms	ms	—	13.5	—	ft	ms	14.6
15.3	ms	14.7	ms	15.0	ms	ms	med	13.6	ms
14.5	15.3	13.5	ms	ms	ms	ms	Br	13.7	ms
ms	15.4	13.4	ms	ms	ms	ms	Br	13.8	ms
14.9	14.8	13.8	15.5	ms	14.0	ms	Br	15.0	ms
14.9	14.0	13.7	ms	15.8	13.9	ms	Br	14.7	ms
ms	14.2	13.5	ms	ms	14.5	ms	Br	14.1	ms
ms	ms(14.0)	ms(14)	ms	ms	ms(14)	ms	med	ms	ms

32

Miscellaneous variables measured on
some extra A plates

	Plate No	Limiting mag	151	296	158	62	339	169	
24 14164	A 2676	16.0	—	—	—	—	—	—	
15613	5552	16.0	—	—	—	—	—	—	
15633	5629	16.0	—	—	—	—	—	—	
15660	5691	16.0	—	—	—	—	—	—	
15956	6042	16.0	—	—	—	—	—	ns	
15957	6043	15.6	—	—	—	—	—	ns	
16967	7289	16.5	15.0:	14.5:	ns	15.8:	15.6:	—	
18450	9272	16.0	—	—	—	—	—	—	
18481	9415	16.0	—	—	—	—	—	—	
	Plate No	Limiting mag	263	8	162	264	151	296	158
24 14846.	A 3698	16.5	15.4	15.2	15.6	14.0:	15.4:	15.6:	ns ns
14878.498	3825	16.5	16.8	15.4	ns	14.8:	15.5	15.7	13.8 ns
" .556	3827	16.5	16.4	15.5	ns	14.9	15.7	15.7	13.9 ns
" .613	3829	16.5	16.4	15.5	ns	14.8	15.8	15.6	13.8 ns
" .642	3830	16.5	16.4	15.5	ns	15.0	15.8	15.7	14.2 ns
" .706	3832	16.5	16.4	15.5	ns	15.0	15.8	15.7	14.2 ns
20692.	11293	16.0:	16.3 ⁰	14.7:	14.7	13.8:	ns	14.4	ns ns
23610	12606	16.5	13.8	13.8:	ns	14.7:	15.3:	14.2	ns ns
23647.492	12587	16.5	—	15.2:	ns	14.5:	15.8:	14.5	16.4 ns
.602	12590	16.5	—	15.4:	ns	14.5:	15.8:	14.7:	ns ns
23648.493	12593	16.5	—	15.0:	ns	14.2:	15.8:	14.5	ns ns
.603	12596	16.5	—	15.4:	ns	14.6:	15.8:	14.4:	ns ns
23890.	12896	15.7	15.1	15.4	ns	14.0	15.5	15.0	ns ns
23909.	12925	16.5	14.7	15.4	15.6	14.7	16.2	14.0	15.2 ns
23918.	12943	16.5	15.1	15.5	15.4	14.7	15.9	14.2	14.2 ns
23933.	12958	16.5	15.5	15.4	15.3	14.8	16.3	14.4	13.8 ns
23939.	12971	16.5	—	15.7	15.6	15.2	16.2	14.0	13.8 ns

✓	✓	✓	✓	✓										
325	17	202	203	205										
—	16.2	17.5:	14.8:	14.0:										
—	15.0:	14.2:	15.4:	14.5:										
—	16.4:	15.5:	14.4:	15.0:										
—	ns	14.0	14.8:	16.0										
ns	—	—	—	—										
ns	—	—	—	—										
—	—	—	—	—										
ns	—	—	—	—										
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
62	114	257	339	120	84	85	144	507	17	202	203	205	311	405
14.7	14.4	14.5	15.4	16.5	15.3	15.4	15.2	15.6	14.0	13.6:	15.3:	15.2	15.2	
14.5	13.8	ns	15.4	ns	15.8	13.9	16.3	15.4	16.0	15.6	15.9	15.4	15.4	
14.4	13.8	ns	15.5	ns	15.8	14.2	16.2	15.1	16.1	15.4	15.7	15.5	15.4	
14.5	14.0	ns	15.4	ns	15.4	14.3	16.3	15.0	16.1	15.6	15.9	15.5	15.3	
14.2	13.8	ns	15.5	ns	15.5	14.3	16.4	14.9:	15.2	16.1	15.4	15.8	15.4	15.4
14.2	ns	14.6:	15.0:	14.0:	14.5	16.2	ns	—	—	—	—	—	—	—
15.5:	ns	15.7:	15.0:	ns	15.6:	14.0	ns	15.3	13.8	15.0	16.5	—	—	—
16.0:	ns	14.7:	16.0	14.5:	15.7	16.5	ns	16.0:	15.9	14.9	15.8	—	15.7	—
16.4:	ns	15.0:	16.3	14.5	15.7	16.6	ns	16.0:	15.9	15.0	15.8	—	15.7	—
15.2	ns	14.8:	16.1	14.6	15.8	16.6	ns	16.2	15.7	15.1	15.9	—	—	—
15.3	ns	14.8	16.0	14.9	15.9:	16.6	ns	16.0:	15.6	15.0	15.9	—	15.7	—
15.6	ns	15.3	14.8	14.6	15.8	15.6	ns	—	—	—	15.4	—	—	—
15.3	ns	16.3	15.7	15.7	16.5	14.4	ns	15.0	15.0	15.0	16.1	—	—	—
15.0	ns	16.5	16.3	16.1	15.7	14.5	ns	14.7	15.7	15.0	16.1	—	—	—
14.6:	ns	ns	15.5	ns	15.5	13.8	ns	15.2	15.3	14.8	15.8	—	15.4	—
15.0:	ns	ns	15.3	ns	15.4	14.0	ns	15.3	15.2:	14.5	15.7	—	16.2	—

Remeasured on Early Plate with *near* comparison stars *see* page 37

	Plate No	B H	339		Plate No	B H	339
12624	B 9561	14.0	—	15165	B 25464	13.5	15.0
12631	9595	—	16.2:	168	25486	—	15.6
12677	10060	14.0	—	268	26009	13.7	—
13290	12917	Br. B. 0?	15.0:	317	26481	13.9	15.0:
346	13490	13.6	15.3:	318	26489	14.3	15.7:
348	13532	—	ns < 15.4	488	27174	13.5	14.9
357	13741	14.1	—	533	27480	13.1	15.3
376	13867	13.3	ns < 15.5	557	27720	13.3	14.7
383	13988	14.2	—	604	28159	14.2	—
409	14290	ns < 13.5	ns < 14.9	605	28170	—	15.2:
702	15943	14.4	ns < 15.0	973	20533	13.2	—
709	15988	14.3	14.8	16221	31430	14.0	—
730	16442	14.1	ns < 14.8	295	32063	13.2	—
758	16879	14.0	ns < 15.4	320	32317	13.5	15.0
797	17233	14.0	catch	360	32582	13.4	ns < 15.4
833	17503	13.7	14.7:	376	32636	14.0	15.5
14036	18882	13.3	15.5	606	33652	13.7	—
55	19062	13.9	ns < 15.2	620	33774	13.8	16.2
70	19195	14.0	ns < 14.5	622	33786	14.0	16.0
84	19439	14.4	ns < 15.5	625	33829	13.8	def.
85	19481	14.2	ns < 14.8	635	33965	13.7	—
86	19506	14.2	15.3	639	34008	—	ns < 15.4
122	19841	13.8	—	668	34295	13.2	15.0
181	20281	13.0	15.6	19547	43121	14.8:	—
187	20475	13.2	—	20288	44531	13.4	14.8:
392	21196	ns < 13.1	14.9	313	44671	14.1	ns < 14.8
538	21926	13.6	—	315	44707	14.3	—
538	23052	13.9	—	325	44742	13.9	15.7
822	23361	14.1	—	328	44753	14.1	16.2
822	25334	13.3	15.2	329	44765	14.1	—

	Plate No	BH	339
20329	B44768	14.1	15.9
337	44846	14.0	15.4
340	44877	13.9	15.9
352	44925	ms 13.5	15.6:
358	44956	14.2:	—
364	45009	14.2	14.7
365	45013	—	14.7
366	45018	14.0	14.6
21047	47756	14.0	—

11206	B 3875	14.4	
12677	10059	ms 13.0	
13325	13311	ms "	
13325	13312	13.3:	
444	14542	ms 13.2	14.8:
13621	15373	13.9	14.8:
663	15607	13.7	
684	15703	13.3	
714	16095	ms 13.8	
743	16615	ms 14.4:	
779	17076	13.6	
14013	18712	13.4	
022	18771	13.3	
067	19162	—	ms 15.0
107	19684	ms 13.5	
804	22926	13.6	

14885
15121
148
486
544
577
623
868
16289
361
16941
17069
094
098

19176
20023
20299
300
330
338
339
348
713
21039
731
732
750
751

Plate No	BH	339
B23925	14.2	1:
25115	13.4	
25261	14.0:	15.1
27149	14.0	
27626	13.8	
27867	13.2	
28356	14.0:	
29472	13.3	
32040	13.0	
32617	14.0	
35763	14.0	
36618	12.9	
36890	ms 13.1	
36954	13.4:	
42302	12.9	
44214	13.4	
44596	13.5	
44615	13.3	
44780	14.1	
44828	14.1	
44868	ms 13.1	
44916	ms 13.5	
45425	12.9	
47484	14.1:	
52854	13.2	
52890	12.9	
52977	12.9	
53060	12.9	

	Plate No	BH	339
24 14107	A2520	14.3	—
212	2826	14.2	—
15632	5625	13.3	—
638	5642	13.3	—
667	5708	13.4	—
16 345	5507	13.4	—
346	5509	13.4	—
18470	9632	14.0	ms 15.4
794	10052	14.3	—
830	10121	13.5	—
8 ⁸² 879	10207	13.2	16.3
	10238	—	—
23 563	12383	14.2	—
577	12417	14.4	—
581	12427	14.4	—
604	12485	14.4	—
644	12580	12.7	—
			15.
16 967	A 7289	—	15.6
14163	2672	—	15.2

	Plate No	339
2414846	A3698	15.2
278.45	3825	15.1
56	3827	15.1
	3828	15.0
61	3829	15.1
	3830	15.2
	3831	15.2
.71	3832	15.2
20692	11293	15.6
23610	12506	14.8
647 49	12587	16.4
.60	12590	16.3
648 49	12593	16.3
.60	12596	16.3
890	12896	14.7
909	12925	15.3
918	12943	16.2
933	12958	15.9
939	12971	15.3

Companion Stars for 339

Stars marked & measured on
MF 10472

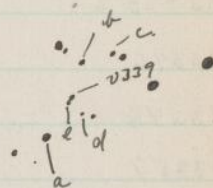
a 14.8

b 15.2

c 15.4

d 15.9

e 16.5



Companion Stars for BH Sco

Stars marked & measured
on MF 10354

a 12.8

b 13.1

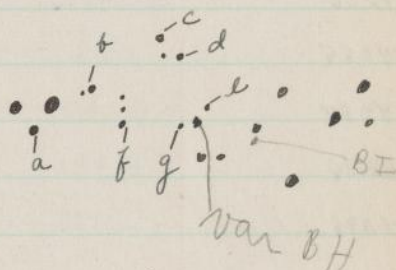
c 13.5

d 13.9

e 14.4

f 14.9

g 15.5



d I think varies

on B3 1430 d >> c

32636 d > c

on another B plate
d much fainter
than usual. -

Curious effect any way
on some plates but
mag. of d and e -

measuring certain variable on additional plates

limiting mag = 14.5

	Plate No	limiting magnitudes	[✓] 159	[✓] 160	[✓] 263	[✓] 162	264	BH	BT
2411881	6073	14.7	—	ns	ns	ns			
12677	10068	15.0	—	ns	ns	ns			
13290	12917	15.0	—	ns	ns	ns			
13346	13490	15.0	—	ns	ns	ns			
13348	13532	14.7	—	—	—	—	14.5	—	—
13357	13741	15.0	—	ns	15.0 ⁴	ns			
13376	13867	15.2	—	ns	15.4 ^{5.0}	ns			
13383	13983	15.0	ns	ns	14.6	ns	14.5	13.9	ns
13409	14290	14.7	—	ns	ns	ns			
13702	15943	15.2	—	ns	ns	ns			
13709	15988	15.2	—	ns	15.2 ^{correlated} 14.6	ns			
13758	16879	15.0	—	15.0	ns	ns			
13797	17233	15.2	—	ns	14.8	ns			
13833	17503	15.2	—	ns	ns	correlated			
14036	18882	15.4	—	ns	14.9	ns			
14055	19062	15.0	—	ns	ns	ns			
14084	19439	15.5	—	ns	ns	ns			
14085	19481	15.4	—	ns	ns	ns			
14086	19506	15.2	—	ns	15.4 ^{not}	ns			
14122	19841	14.5	—	—	—	—			
14181	20281	15.3	15.3	ns	15.1	ns	15.5	12.8	ns
14189	20475	15.2	—	ns	ns	ns			
14392	21196	14.8	—	ns	ns	ns			
14538	21926	15.0	—	ns	ns	15.0			
14822	23052	15.2	—	ns	ns	ns			
14844	23361	15.0	—	ns	ns	ns			
15158	25334	14.7	—	15.0	15.4 ^{5.4}	ns			
15185	25464	15.6	ns	ns	15.6	ns	15.4	13.9	ns
15268	26009	15.2	—	ns	ns	ns			

<u>88</u>	<u>AR</u>	<u>195</u>	91	6w	123	198	14	<u>15</u>	169	325	93
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	ns	ns	ns	—	15.0	ns	ns
			14.8?	ns	ns	ns	—	—	—	ns	ns
			ns	ns	14.9	ns	ns	—	ns	ns	ns
—	—	—	—	—	—	ns	—	—	—	—	—
			ns	ns	14.6	ns	ns	—	14.7 ⁴	ns	ns
			ns	ns	ns	ns	ns	—	14.0 ⁵	ns	ns
<u>ns</u>	<u>ns</u>	<u>14.7</u>	ns	ns	ns	ns	ns	ns	13.7	ns	ns
			ns	scratch	ns	ns	ns	—	ns	ns	—
			ns	ns	15.4	15.6	ns	—	ns	ns	ns
			ns	ns	14.9	15.4	ns	—	ns	ns	ns
			ns	ns	14.0	ns	ns	—	ns	ns	ns
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	15.5	ns	ns	—	15.4	ns	14.9
			ns	ns	ns	ns	—	—	14.7	ns	14.8
			ns	ns	ns	ns	—	—	ns	15.0 ¹	ns
			—	ns	ns	—	—	—	—	—	—
<u>ns</u>	<u>ns</u>	<u>13.4</u>	ns	ns	ns	15.3	15.2	ns	ns	ns	ns
			ns	ns	ns	ns	15.4	—	ns	14.7	ns
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	14.5	ns	ns	—	ns	13.7	ns
			ns	ns	ns	ns	ns	—	ns	ns	ns
			ns	ns	ns	ns	ns	—	14.8	15.0	ns
			ns	ns	15.0	ns	ns	—	ns	ns	—
<u>ns</u>	<u>15.4</u>	<u>ns</u>	ns	15.7	ns	ns	ns	ns	13.9	ns	ns
			15.3	ns	ns	ns	ns	—	ns	ns	ns

	Plate No	Limiting mag.	159	160	263	162	264	DH	DI
24 15533	B 27480	15.2	—	ns	15.4	^{MSC} 15.8	—	—	—
15557	27720	15.6	ns	ns	15.8	ns	13.9	13.9	ns
15973	30533	15.2	ns	ns	ns	ns	15.0	13.2	15.0
16221	31430	14.7	ns	ns	15.0	ns	14.0	14.5	14.8
16320	32317	16.0	13.7	ns	15.7	ns	14.2	13.6	ns
16360	32582	15.2	—	ns	ns	ns	—	—	—
16606	33652	14.7	ns	ns	ns	ns	14.7	13.7	ns
16620	33774	16.3	ns	ns	16.0	ns	14.6	14.6	16.0
16625	33829	15.2	—	ns	ns	ns	—	—	—
16635	33965	15.4	—	ns	15.6	ns	—	—	—
16668	34295	16.5	ns	14.5	15.0	ns	14.3	13.3	15.4
19547	43121	14.5	ns	ns	ns	ns	ns	13.9	ns
20288	44531	15.2	14.6	ns	ns	ns	13.5	13.4	ns
20313	44671	15.2	ns	ns	ns	ns	13.4	14.4	ns
20315	44707	15.3	ns	ns	15.3	ns	ns	14.0	15.3
20325	44742	16.3	ns	16.2	15.2	ns	15.5	13.4	13.5
20328	44753	16.0	ns	16.0	15.4	ns	14.6	13.7	13.7
20329	44765	15.2	ns	15.4	ns	ns	15.2	13.9	14.2
21047	47756	14.7	ns	ns	ns	ns	15.0	13.9	ns

<u>fs</u>	<u>42</u>	<u>195</u>	91	6w	123	198	14	<u>15</u>	169	325	93
—	—	—	ns	ns	ns	ns	ns	—	ns	ns	—
ns	14.0	14.8	ns	ns	ns	ns	ns	ns	ns	15.0	—
ns	ns	ns	ns	15.0	ns	ns	ns	14.2	ns	ns	Be?
ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	14.8	ns
ns	15.3	^{ns} 15.4	ns	ns	16.0	15.4	ns	15.8	15.2	ns	14.6
—	—	—	ns	ns	ns	ns	ns	—	ns	Be	ns
ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
ns	16.1	^{ns} 15.0	ns	ns	ns	16.1	ns	ns	16.3	ns	ns?
—	—	—	ns	ns	ns	^{ns} 15.4	ns	—	ns	ns	Be?
—	—	—	ns	ns	ns	ns	ns	—	ns	ns	ns
ns	13.9	15.9	ns	ns	14.5	ns	ns	ns	ns	ns	ns?
ns	ns	ns	ns	14.0	13.8	ns	14.1	ns	ns	ns	ns
15.0	13.8	ns	ns	ns	ns	ns	15.0	ns	ns	ns	ns
ns	ns	13.7	ns	15.0	13.7	ns	ns	ns	ns	13.2	ns
ns	15.0	14.0	ns	14.0	13.8	ns	ns	ns	ns	13.5	ns
ns	15.5	13.9	ns	14.8	14.4	ns	ns	15.8	ns	13.6	ns
15.9	15.6	14.0	ns	14.3	13.9	ns	ns	15.0	ns	13.7	ns
ns	ns	14.4	ns	14.6	13.5	ns	ns	15.0	ns	13.2	ns
ns	13.9	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns

42

Shutter B plate limiting - 13.5 - 14.5

	Plate No	limiting magnitude	limiting				
			159	264	B14	B1	B8
24 21751	B 53000	13.9	ns	ns	12.7	13.6	ns
21750	52977	13.8	ns	ns	12.6	ns	ns
21831	49905	14.0	ns	ns	ns	ns	ns
20713	45425	14.4	ns 14.4	ns	12.5	ns	ns
20348	44916	13.8	ns	ns	ns	ns	ns
20335	44828	14.4	ns	ns	13.7	14.1	ns
20330	44780	14.4	ns	14.5	14.0	ns	ns
20300	44615	15.2	ns	14.8	13.1	ns	ns
20020	44214	13.8	ns	ns	ns	ns	ns
19176	42302	13.7	ns	—	12.9	ns	ns
17094	36890	13.7	ns	14.0	ns	ns	ns
16361	32617	14.0	ns	—	13.8	ns	ns
16289	32040	14.0	ns	—	13.3	ns	ns
15868	29472	15.0	14.2	13.8	14.2	ns	ns
15544	27626	14.0	ns	13.5	13.2	ns	ns
15486	27149	14.0	ns	—	13.6	ns	ns
15148	25261	14.2	ns	13.4	14.2	ns	ns
15121	25115	13.6	ns	—	13.5	ns	ns
15120	25079	13.5	—	ns	—	—	—
14892	24006	13.5	—	ns	—	—	—
14808	23923	13.6	ns	—	13.7	ns	ns
14804	22926	14.0	ns	—	13.1	ns	ns
14181	20284	14.0	—	ns	—	—	—
13684	15703	14.4	ns	14.0	13.9	ns	ns

10	195	15	325
13.7	ns	ns	ns
13.4	ns	ns	ns
ns	ns	ns	ns
ns	ns	14.5	ns
ns	ns	ns	ns
ns	ns	14.1	13.3
ns	14.0	ns	13.7
14.0	14.8	ns	14.0
ns	ns	ns	ns
ns	ns	—	—
ns	ns	ns	ns
14.0	ns	—	—
ns	ns	—	—
14.1	ns	ns	14.5
13.3	14.0	—	—
ns	ns	—	—
ns	ns	ns	ns
ns	ns	—	—
—	—	ns	ns
—	—	ns	ns
13.4	ns	—	—
ns	ns	—	—
—	—	—	—
ns	ns	ns	ns

	Plate No.	Limiting Mg.	456	405	399	311	99	94	259
2412631	B 9595	15.8	msl	msl	Bi?	14.8	msl(14.3		
12677	10060	15.0	msl(14.0	msl(14.5	msl(14.7	ms	msl(13.0	ms	ms
13290	12917	15.2	15.0	ms	msl(14.0	msl(14.5	msl(14.0	—	—
346	13490	15.0	15.4	ms	ms	ms	msl(14.0	msl(14.0	14.5
348	13532	14.5	def.	—	—	med.	ms	—	—
357	13741	15.0	—	msl(14	—	—	—	—	—
376	13867	15.2	msl(15.5	ms	msl(14	msl(14.5	msl(14	13.2	—
383	13983	15.5	msl(14	ms	ms	ms	ms	ms	ms
409	14290	14.9	msl(14.7	—	ms	—	—	—	—
702	15943	15.2	ms	14.9	ms	14.7	msl(14.5	ms	15.2
709	15988	15.2	14.6	15.1	ms	msl(14.5	msl(14.5	ms	ms
730	16442	15.2	—	14.7	ms	15.0	13.2	ms	ms
758	16879	14.7	15.0	ms	ms	msl(14	msl(14.0	ms	ms
797	17233	15.2	15.3	ms	ms	ms	ms	ms	deficit
833	17503	15.2	15.3	ms	ms	ms	ms	ms	13.5
14036	18882	15.6	15.0	ms	ms	14.8	13.5	ms	15.1
055	19062	15.0	14.9	15.2	ms	ms	14.5	ms	13.6
070	19195	15.2	msl(14.5	ms	ms	msl(14.5	msl(14.5	msl(14.5	13.3
084	19439	15.6	15.2	ms	ms	14.8	ms	ms	13.4
085	19481	15.4	—	ms	ms	ms	ms	ms	14.0
086	1950.6	15.2	15.4	ms	ms	14.5	msl(14.5	ms	13.2
122 085	19481	14.7	—	—	—	—	—	—	—
181	20281	14.7	15.2	15.2	ms	ms	ms	ms	ms
189	20475	15.2	msl(14.5	msl(14.5	ms	msl(14.5	ms	ms	ms
538	21926	15.0	msl(14	msl(14	ms	msl(14.4	ms	ms	ms
822	23052	15.2	—	—	—	—	ms	—	13.1
844	23861	14.7	—	—	—	—	ms	—	13.5
15158	25334	15.4	15.4	ms	—	—	—	—	—
165	25464	15.6	—	—	ms	15.6	14.8	ms	ms

170	AD	27w	20	21	207	225	22	368	66	363	
ns	ns	14.9	ns	ns	14.0	14.7	ns	ns	ns	13.4	
—	—	—	—	—	—	—	—	—	—	Br.	
—	—	—	—	—	—	—	—	—	—	13.6	
—	—	—	—	—	—	—	—	—	—	—	
—	ns	14.0	ns	14.9	13.0	ns	ns	ns	Br	13.5	
—	—	—	—	—	—	—	—	—	—	Br	
13.9	ns	13.8	ns	14.1	14.4	ns	ns	14.0	ns	13.0	
—	—	—	—	—	—	—	—	—	—	Br	
defect mean	15.2	ns	ns	ns	14.5	defect	defect	ns	14.9	ns	13.6
u Br	ns	ns	ns	ns	15.0	13.6	ns	ns	14.7	ns	13.6
u Br	ns	ns	ns	ns	15.0	13.6	ns	ns	14.7	ns	13.6
12.8	ns	13.9	15.2	15.0	ns	ns	ns	13.4	ns	13.7	
14.7	ns	14.7	ns	ns	ns	12.6	ns	14.0	ns	13.0	
ns	ns	ns	ns	ns	ns	13.4	ns	ns	14.9	13.6	
14.4	ns	ns	ns	ns	13.0	ns	ns	ns	ns	14.0	
13.7	ns	ns	ns	ns	13.9	14.0	ns	12.6	ns	13.6	
13.8	ns	ns	ns	ns	ns	13.2	13.5	13.4	ns	13.4	
13.5	ns	ns	ns	ns	ns	13.2	13.4	13.7	ns	13.3	
12.7	ns	13.4	14.5	14.5	ns	13.6	13.7	13.7	ns	13.3	
13.4	15.0	13.7	ns	15.3	ns	13.7	14.0	14.7	14.0	13.7	
—	—	—	—	—	—	—	—	—	—	—	
—	13.8	Br	—	—	ns	ns	—	—	—	13.3	
ns	ns	ns	ns	ns	13.4	ns	ns	ns	ns	13.4	
ns	ns	ns	ns	ns	13.7	ns	ns	ns	ns	13.7	
ns	ns	ns	ns	ns	ns	ns	ns	15.0	14.0	13.1	
12.5	15.0	14.2	ns	ns	13.3	ns	ns	ns	ns	13.5	
13.3	ns	14.0	ns	ns	ns	ns	ns	ns	13.8	13.8	
—	—	—	—	—	—	—	—	—	—	—	
13.8	ns	ns	ns	ns	14.3	ns	15.3	15.7	15.2	13.2	

	Plate No	Limiting magnitude	456	405	399	311	99	94
✓ 15,168	B 25486		15.2	—	Br	15.0:	15.4:	ms < 14
268	26009	15.2	—	ms < 14.5	ms	ms	ms	ms
316	26471	15.4	—	—	ms	Br	ms	ms
317	26481	15.6	—	—	ms	ms	ms	ms
318	26489	15.6	—	15.5:	ms	15.0	ms	ms
488	27174	15.0	15.2	ms	Br	ms	ms	ms
533	27486	15.2	15.2	ms	Br	Br	ms	—
557	27720	15.4	ms	15.7:	Br	Br	ms	ms
604	28159	15.0	—	—	—	—	—	—
605	28170	15.4	—	—	ms	15.0:	ms	14.7:
973	30523	15.2	—	—	—	—	—	ms
16,221	31430	14.5	—	ms	ms	ms	ms	ms
295	32063	15.4	—	ms	—	—	—	—
320	32317	15.8	15.4	15.7	15.4	14.5	14.0	ms
360	32582	15.2	15.2	ms	ms	Br?	Br?	—
376	32686	15.6	15.0	ms	ms	15.6	15.4	ms
606	33652	14.5	ms	ms	ms	ms	ms	ms
620	33774	15.8	ms < 16.0	ms	ms	14.8	15.3	ms
622	33785	15.8	15.3	ms	ms	15.1	15.4	ms
625	33829	15.4	ms	ms	ms	15.3	15.3	15.3:
635	33965	15.2	—	ms	ms	ms	ms	ms
639	34008	15.8	—	—	ms	15.0	14.7	ms
668	34295	16.2	15.7	ms	ms	15.6	ms	14.2
19,547	43121	14.5	—	—	—	—	—	ms
20,288	44531	15.2	—	ms	ms	Br:	ms	14.8
313	44671	15.2	ms	ms	ms	ms	ms	14.2
315	44707	15.2	—	ms	ms	ms < 14.7	ms < 14.7	14.6
325	44742	16.3	14.8	ms	ms	15.6	ms	14.7

259	170	AD	27w	20	21	207	225	22	368	66	363
—	—	—	—	—	—	—	—	—	—	—	—
ms	ms	13.7	ms	ms	ms	13.2	ms	13.9	ms	13.6	—
14.4	15.4	—	—	—	—	—	—	—	—	15.6	—
13.9	15.6	15.6?	ms	15.2	ms	14.1	ms	15.2	ms	14.7	13.2
13.8	ms	15.6?	ms	15.5	ms	14.5	ms	15.7	14.8	13.6	—
ms	—	—	—	—	—	—	—	—	—	—	14.0
—	—	—	—	—	—	—	—	—	—	—	—
—	—	ms	ms	ms	ms	14.1	ms	—	—	—	14.1
14.4	13.8	—	—	—	—	—	—	ms	ms	ms	—
ms	13.9	defect?	ms	ms	13.9	14.5	ms	12.8	ms	ms	13.2
ms	ms	15.0	ms	ms	14.0	ms	ms	14.4	ms	ms	14.4
—	—	ms	14.0	ms	14.4	med:	+	—	—	—	13.4
med	13.5	—	—	—	—	—	—	—	—	—	13.4
—	—	—	—	—	—	—	—	—	—	—	13.6
15.2	15.5	—	—	—	—	—	—	—	—	—	13.1
14.4	ms	13.8	ms	ms	ms	13.6	ms	ms	ms	14.0	13.5
14.7	15.0	—	—	—	—	—	—	—	—	—	14.5
15.0	—	—	—	—	—	—	—	—	—	—	13.6
ms	—	—	—	—	—	—	—	—	—	—	14.2
14.7	13.8	14.0	13.8	15.0	ms	ms	ms	13.2	15.1	ms	13.3
15.4	13.6	—	13.6	ms	ms	15.5	ms	14.0	15.8	ms	13.3
ms	13.6	15.6	13.9	ms	ms	ms	ms	15.0	14.8	ms	13.4
ms	ms	13.6	ms	ms	ms	ms	ms	ms	ms	ms	13.5
ms	ms	ms	ms	15.2	ms	ms	ms	14.2	14.2	ms	13.6
ms	ms	ms	ms	ms	ms	ms	ms	ms	13.2	ms	13.5
ms	15.2	ms	ms	15.2	ms	ms	ms	ms	13.6	ms	13.5
14.2	14.7	ms	ms	16.0	13.9	15.4	ms	16.2	14.2	ms	13.2

✓	Plate No	Limiting Mg.	456	405	399	311	99	94
20,328	B 44753	16.4	15.0	ms	ms	15.4	ms	15.0
329	44765	15.2	—	ms	ms	ms 14.5	ms 14.5	ms
329	44768	15.6	15.0	ms	ms	15.4	ms	15.3
337	44846	15.4	15.4	ms	ms	15.3	ms	15.3
340	44847	16.5	15.1	ms	ms	15.2	ms	15.6
352	44925	14.5	15.0	ms	ms	ms	ms	ms
358	44956	14.7	—	—	ms	ms	ms	ms
364	45009	15.0	15.0	ms	ms	15.4	15.2	ms
365	45013	14.7	14.8	ms	ms	ms	15.2	ms
366	45018	15.0	15.5	ms	ms	15.4	15.2	ms
21,047	47756	14.7	—	ms	ms	ms	ms	ms

259	170	AD	27w	20	21	207	225	22	368	66	363
13.7	13.9	ns	ns	15.7	13.8	14.0	ns	15.8	13.9	ns	13.6
13.6	14.0	ns	ns	ns	13.9	14.4	ns	ns	14.7	ns	13.2
—	—	—	—	—	—	—	—	—	—	—	Re
Re	—	—	—	—	—	—	—	—	—	—	Re
13.7	13.6	ns	ns	ns	13.5	13.8	ns	ns	14.9	ns	13.4
—	—	—	—	—	—	—	—	—	—	—	—
14.1	13.2	ns	ns	ns	ns	13.6	ns	ns	ns	ns	13.4
—	—	—	—	—	—	—	—	—	—	—	Re
—	—	—	—	—	—	—	—	—	—	—	Re
—	—	—	—	—	—	—	—	—	—	—	Re
ns	ns	ns	ns	ns	ns	ns	12.5	ns	ns	ns	13.4

	Plate No	Limiting Mg.	99	259	170	AD	270
✓ 11,206	B 3875	13.9	—	ms	ms	ms	13.8
12,624	9561	15.0	—	—	—	15.0	ms/15.0
1677	10059	13.6	—	—	—	—	—
13,325	13312	14.0	ms	14.0	—	—	—
621	15373	14.4	ms	ms	ms	ms	ms
661.	15589	13.8	ms	ms	ms	ms	ms
663	15607	14.0	ms	ms	ms	ms	ms
684	15703	14.0	ms	ms	13.8	ms	ms
714	16095	13.8	ms	Br?	13.0	ms	ms
743	16615	13.8	ms	ms	ms	ms	ms
779	17076	13.8	ms	ms	ms	ms	ms
14,013	18713	13.8	ms	ms	ms	ms	ms
022	18771	13.8	ms	ms	ms	ms	ms
107	19684	13.8	ms	ms	13.8	ms	ms
804 538	22926	14.0	—	—	—	14.0	ms
885	23923	14.0	—	—	—	ms	ms
15,120	25079	14.4	ms	ms	ms	—	—
121	25115	14.0	—	—	—	ms	ms
148	25261	13.8	ms	ms	ms	—	—
310	26456	14.4	ms	14.2	ms	—	—
486	27149	—	—	—	—	13.8	—
577	27851	14.2	—	—	—	ms	ms
623	28356	13.9	ms	ms	13.8	ms	ms
16,626	33851	14.0	13.7	13.7	14.0	—	—
941	35763	13.7	ms	ms	ms	ms	ms
17,069	36618	13.8	ms	ms	ms	—	—
19,176	42302	13.8	—	—	—	ms	ms
20,299	44596	14.0	ms	ms	ms	ms	ms

21	207	225	22	368	363
15.01	14.2	ns 14.7	ns 14.7	ns 14.7	13.5
—	—	—	—	—	—
—	—	—	—	—	2 ft ns
—	—	—	—	—	Br
ns	ns	ns	14.0	ns	13.4
ns	ns	ns	ns	ns	13.4
ns	13.6	defect	ns	ns	13.4
ns	ns	ns	ns	ns	13.4
ns	13.6	ns	ns	ns	13.4
ns	ns	ns	ns	ns	13.4
ns	ns	ns	ns	ns	Br
ns	ns	ns	ns	13.0	13.4
ns	14.01	ns	ns	12.6	13.3
ns	ns	ns	ns	ns	13.3
—	—	—	—	—	ft?
—	—	—	—	—	Br
—	—	—	ns	ns	—
—	—	—	—	—	Br
—	—	—	—	—	ns
—	—	—	ns	ns	—
—	—	—	—	—	—
—	—	—	—	—	Br
ns	13.4	ns	ns	ns	ft
—	13.6	ns	13.8	ns	Br
ns	ns	ns	ns	ns	13.8
—	—	—	—	—	Br
—	—	—	—	—	ft
ns	ns	ns	13.8	13.6	13.4

	✓	Plate No	limiting Mg	99	259	170	AD	270
20,300		B 44615	14.4	ms	ms	ms	ms	ms
330		44780	14.0	ms	14.0	14.2	ms	ms
335		44828	14.0	ms	13.3	14.4	ms	ms
339		44868	14.2	ms	13.6	13.0	—	ms
348		44916	✓	—	—	13.2	—	—
713		45425	13.8	ms	ms	13.0	ms	ms
21,034		47484	13.8	ms	ms	ms	ms	ms
331		49905	13.5	ms	ms	ms	—	—
731		52854	13.8	ms	ms	ms	ms	ms
732		52890	14.0	ms	ms	ms	ms	ms
750		52977	13.6	ms	ms	ms	ms	ms
751		53000	14.0	ms	ms	ms	ms	ms

21	207	225	22	368	363
ns	ns	ns	13.6	13.5	13.8
14.4	ns	ns	ns	ns	13.3
ns	ns	ns	ns	ns	13.4
ns	14.0	ns	ns	ns	13.4
—	—	—	—	—	—
ns	ns	ns	ns	ns	13.3
ns	ns	12.4	ns	ns	13.8
ns	ns	ns	ns	ns	—
ns	ns	ns	ns	13.3	—
ns	ns	ns	ns	13.0	13.3
ns	ns	ns	ns	14.0	13.4
ns	ns	ns	ns	13.6	13.4

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JD	Plate No	Limiting Mg. V	456	405	399	311	99	94
2414107	A. 2520	—	—	—	—	—	—	—
14212	2826	16.5	—	15.6	ns	15.4:	ns	16.2
14510	3221	—	—	—	—	—	—	—
15632	5825	16.0	—	16.2:	ns	15.4	ns	15.1
15638	5642	16.6	—	ns	15.8	15.2	ns	15.3
15667	5708	16.2	—	ns	15.8	15.4	ns	15.6
16345	6507	16.5	—	—	16.0	—	14.5	ns
16346	6509	16.1	—	ns	16.0	15.4	14.0	ns
18470	9362	15.6	15.2	ns	ns	—	—	—
18794	10052	16.3	—	ns	16.2:	15.2	ns	15.2
18830	10121	16.2	—	ns	ns	15.8	ns	15.5
18879	10202	16.5	—	—	16.5	15.4:	ns	ns
18882	10207	16.6	15.4	16.4	16.3	15.4	ns	ns
18907	10238	16.5	—	—	15.5	16.0	15.8:	ns
23563	12383	16.5	—	—	—	—	—	—
23577	12417	16.5	—	—	—	—	—	—
23581	12427	16.5	—	ns	—	—	—	—
23604	12485	16.6	—	ns	—	—	—	—
23644	12580	16.6	—	16.3	—	—	—	—
24024	13070	16.8	—	—	—	—	—	—
24025	13073	16.6	—	—	—	—	—	—
18481	9415	—	—	—	—	—	—	—
18450	9272	16.0	—	—	—	—	—	—
14164	2676	16.0	—	—	—	16.2	ns	16.0:
15613	5552	16.0	—	—	—	15.9	ns	15.8
15633	5629	16.0	—	—	—	15.0:	ns	15.7
15660	5691	16.0	—	—	ns	14.8	ns	15.6
15956	6042	16.0	—	—	—	—	—	ns

259	170	AD	27w	20	21	207	225	22	368	66	363
—	—	13.8:	—	—	—	—	—	—	—	—	—
16.5	15.6	ns	ns	ns	16.5	15.6	ns	ns	16.2	15.4	13.4
15.9	15.8	ns	16.2	ns	15.7	13.9	ns	ns	16.3	ns	13.7
16.0	15.9	ns	16.5	ns	15.9	13.9	ns	ns	16.0	16.6	13.9
ns	ns	16.1	16.2	ns	ns	15.5	ns	ns	ns	ns	13.8
14.0	13.8	ns	15.8	15.4	15.5	16.5	15.6	ns	15.4	15.2	13.7
13.9	13.8	ns	16.2	15.4	15.5	ns	15.5	ns	15.3	14.8	13.9
—	—	—	—	—	—	—	—	—	—	—	13.7
ns	16.3:	ns	13.9	ns	15.7	16.3	13.6	14.8	13.8	ns	13.9
15.7	15.1	ns	15.4	ns	15.2	15.4	13.9	ns	15.4	ns	13.9
15.4:	13.7:	—	—	—	—	Br:	ns:	ns	16.5	15.6:	—
15.3	13.8	15.0	16.6	ns	ns	13.9	16.6	ns	16.2	15.3	14.1
15.8	14.0	—	—	—	—	—	—	ns	16.6	15.8	—
—	—	ns	15.7	ns	15.4	15.7	13.6	15.8	—	—	13.8
—	—	ns	16.1	ns	15.9	15.4	13.9	15.8	—	—	13.9
—	—	ns	16.0	ns	16.3	15.6	14.0	16.0	14.7	—	13.9
—	—	ns	16.3	ns:	16.5	13.7	15.4	—	—	—	13.8
—	—	15.0	ns	16.5:	16.5:	13.7:	16.5	15.4	—	—	13.8
—	—	—	—	—	—	—	—	—	—	—	13.7
—	—	—	—	—	—	—	—	—	—	—	13.7
—	—	ns	15.0:	15.2	ns	ns	ns	ns	Br	—	—
ns	16.0	—	13.6:	15.6:	15.6:	16.2	ns	ns	14.5:	15.0:	—
ns	ns	—	—	—	—	—	—	—	—	—	—
15.5:	14.4:	—	—	—	—	—	—	—	—	—	—
ns	15.4	—	—	—	—	—	—	—	—	—	—
ns	ns	—	—	—	—	—	—	—	—	—	—
ns	13.6	—	15.5	ns	15.7	13.8	ns	14.5:	ns	16.6:	Br

(over)

	Plate No	limiting mg	456	405	399	311	29	94
15957	A 6043	15.6	—	—	—	—	—	ns
16967	7289	16.5	ns	15.0	—	—	—	—

			405	399	456
2414846	A 3698	16.5	ns	ns	15.5
14878. 498	3825	"	15.7	16.7	15.4
556	3827	"	15.7	16.6	15.5
613	3829	"	15.7	ns	15.4
706	3832	"	15.7	ns	15.4
20692.	11293	16.0:	15.5:	—	15.4
23610	12506	16.5	ns	ns	15.2
23647. 492	12587	"	15.9	15.4	15.2
.602	12590	"	15.9	15.4	15.2
23648. 493	12593	"	15.8	15.2	15.2
.603	12596	"	15.8	15.5:	15.2
23890	12896	15.7	15.6	ns 15.4	15.4
909	12925	16.5	15.2	16.4 ⁰ :	15.5
918	12943	"	15.0	16.5 ⁰ :	15.3
933	12958	"	15.3	16.6:	15.2
939	12971	"	15.4	16.6 ⁰ :	15.2
24727	13937	16.5	ns	15.7	15.2
733	13958	"	ns	15.5	16.0:

259	170	AD	27w	20	21	207	225	22	368	66	363
ns	14.0	—	—	—	—	Br	ne	15.0	ns	ns	—
—	—	—	—	—	—	—	—	—	—	—	—

60

	Plate No	339		Plate No	339	
23 912	MF 8544	16.4	24727	MF 10570	15.2	12
992	8723	15.2	731	10572	15.5	14
24 018	8755	14.8	733	10614	15.1	
294	9178	15.2	753	10666	16.4	14
370	9648	14.9	755	10672	16.4	
623	10132	16.1	759	10683	16.4	
626	10138	15.7	25330	11492	15.0	
627	10143	16.0	382	11645	16.1	16
642	10189	14.7	383	11658	defect	
646	10214		384	11674	15.8	
647	10222	14.9	385	11687	16.0	
648	10230	14.9	386	11699	15.9	
649	10238	15.0	388	11713	16.3	
650	10247	15.0	389	11728	16.1	
653	10265	15.0	410	11798	14.7	
654	10269	15.0	412	11817	14.7 ^{ab}	
655	10277	15.1	414	11840	14.9	
656	10282	15.0	467	11868	15.0	
669	10308	16.1	465	12147	15.2	
670	10315	16.3	481	12255	14.7	this is a fogged plate & star shows strangely
678	10345	16.2				
679	10354	16.4				
683	10381	16.0		A 14016	16.2	
797	10425	15.0				
700	10440	15.0				
702	10456	14.9				
704	10472	15.8				
706	10488	15.0				
710	10515	15.2				

pencil one ramones

O-C

L.P. 9 69 69.05

61

69.05 68.9 69

Plate No	339						
13785	X 7832	15.5 ⁶	25	53	51	50	17417
14029.6	8721	15.0 ⁴	30	32	29	28	418
.8	8723	15.0 ²		32	29	28	434
14438	9167	15.1 ⁴	35	27	24	22	439
808	9565	15.0 ⁵	40	53	49	47	440
870	9899	15.1 ⁶	41	46	42	40	814
879	9926	15.1 ⁴		55	51	49	18160
15561	10257	14.9 ⁸	51	48	43	41	21465
905	10476	14.8 ^{15.2}	56	47	41	39	468
908	10495	11.8 ^{15.0}		50	44	42	470
910	10500	14.9 ⁸		52	46	44	476
911	10507	14.9 ⁸		53	47	45	
929	10569	15.7 ⁶	57	2	65	62	
931	10574	15.7 ⁶		4	67	64	
932	10578	15.7 ⁸		5	68	65	
983	10583	15.9 ^{16.0}		6	0	67	
934	10588	16.1 ^{15.7}		7	1	68	
16638	10822	16.1 ¹	67	22	14	12	
639	10827	16.0 ¹		23	15	13	
640.5	10833	16.1 ⁰		24	16	14	
646.6	10834	16.2 ^{15.9}		24			
.8-	10835	16.1 ^{16.1}		24			
.8-	10836	ms < 15.9 ^{16.1}		24			
641	10837	16.1 ¹		25	17	15	
642	10844	15.9 ⁶		26	18	16	
643	10849	15.9 ⁸		27	19	17	
645	10857	15.6 ¹		29	21	19	
647	10868	15.7 ⁶		31	23	21	

Plate No	339						
X 11294	15.0 ¹	78	31	43	35		
11299	15.0 ³	32	44	36			
11341	15.1 ⁵	48	60	52			
11346	15.3 ⁵	53	65	57			
11347	15.4 ^{16.0}	54	66	58			
11793	15.1 ⁰	84	14	27	19		
12138	15.0 ²	89	15	28	19		
13103	15.3 ²	137	6	26	12		
13104	15.4 ⁶	9	29	13			
13105	15.7 ⁵	11	31	17			
13106	15.0 ⁷	17	37	23			

62

Long Periods measured on 1928 MF Plates

JD	Plate No	140	179	BC	BB	163828	BD	AE	AG	BH	BE	10	88
24 25330	1158 MF 11492	ms	12.7	15.1	ms	15.2	ms	15.7	13.3	14.4	15.5	13.6	15.3
382	11645	13.6	13.0	15.8	13.0	15.1	13.7	15.6	15.4	15.7	ms	16.5	ms
383	11658	13.7	12.8	ms	13.3	15.2	13.6	15.0	15.4	15.2	ms	16.5	ms
384	11674	13.8	12.6	ms	13.7	15.4	13.9	15.2	15.7	15.0	ms	16.5	ms
385	11687	14.6	13.0							15.2			16.1
386	11699	14.0	12.4							15.0			ms
388	11713	14.6	12.6							15.0			15.9
389	11728	13.6	12.4	ms	13.5	15.1	13.7	15.2	15.8	15.3	ms	16.6	15.3
410	11798	15.0	12.8	ms	13.9	15.0	13.6	14.5	ms	14.2	ms	ms	15.3 or ms
412	11817	15.3	12.6							13.9	ms		ms
414	11840	15.0	12.8							13.9			ms
417	11868	15.4	13.3	ms	14.2	15.2	13.6	13.9	ms	14.0	ms	16.2	ms
465	12147	14.5	12.5	14.2	15.0	15.4	15.9	12.5	14.9	13.7	15.2	13.8	15.5
481	12255	13.6	12.6	14.7	ms	15.3	ms	13.6	13.7	13.9	15.2	13.2	ms

456 346 269 162 8 198 84 85 144 203 202 97

25330	1158 MF 11492	15.3	12.7	14.8	ms	15.0	ms	15.4	ms	15.1	ms	14.9	ms
382	11645	15.1	ms	15.8	ms	13.7	15.7	15.5	15.7	15.8	15.5	15.2	ms
383	11658	14.8	15.5	16.4		13.6	15.1	15.6	16.0	15.9			15.2
384	11674	ms	~	16.4		13.9		15.1	15.8		16.0		15.2
385	11687	15.1	ms	ms	ms	14.0	15.5	15.6	15.7	ms	15.7	15.0	16.5
386	11699	15.7	ms	ms		14.2	1	15.7	15.7		16.0		
388	11713	15.0	16.0	16.0		13.9		15.5	15.3		15.8	15.4	
389	11728	15.3	15.5	15.6	ms	14.4	15.4	15.4	15.4		15.4	15.4	ms
410	11798	15.0	ms	-	ms	15.9	ms	15.3	14.7	ms	15.3	14.6	-
412	11817	15.0	ms	15.0		14.7					15.2		14.8
414	11840	15.2											
417	11868	15.0	ms	15.4	15.8	15.0	16.0	15.7	13.9	ms	15.5	14.8	ms
465	12147	14.8	ms	14.4	15.0	15.3	ms	15.4	15.7	ms	15.8	15.3	15.4
481	12255	15.4	ms	15.2	15.2	15.4	ms	15.6	ms	ms	ms	14.5	-

AD	335	3	337	151	5	296	158	114	339	257	81	62	178	405	263	160	159
ns	13.8	ns	15.8	-	ns	15.8	16.0	ns	15.2	ns	ns	15.0	14.9	ns	15.6	ns	ns
ns	15.3	ns	ns	ns	15.6	15.0	15.5	ns	16.0	ns	16.5	15.4	15.6	ns	16.5	ns	ns
ns	15.8	16.5	ns	16.0	15.7	14.4	15.2	ns	15.2	ns	16.5	15.6	15.8	ns	16.3	ns	ns
ns	15.4	ns	ns	!	ns	14.8	15.4	ns	15.8	ns	ns	16.0	15.5	ns	15.9	ns	ns
									16.2						ns		
									15.9						16.3		
									16.2						16.3		
ns	15.4	ns	ns	15.3	15.3	14.5	15.5	ns	15.6	ns	16.0	16.2	16.0	ns	16.0	ns	ns
ns	ns	15.0	ns	-	-	16.0	ns	ns	15.1	ns	14.4	ns	ns	ns	15.2	ns	ns
									15.0						15.0		
ns	ns	14.5	ns	15.2	14.1	15.3	-	ns	15.2	ns	13.7	16.0	ns	ns	15.5	ns	15.9
14.5	13.9	15.3	14.0	15.2	15.0	16.0	14.2	def	15.4	15.0	13.9	14.0	ns	ns	16.6	ns	14.2
13.7	13.8	ns	14.4	-	ns	15.4	15.2	ns	15.4	ns	15.6	15.3	ns	ns	ns	ns	15.0
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
205	311	95	94	259	91	221	123	363	14	169	366	325	93	20	21	22	66
15.3	15.2	15.0	ns	-	ns	10.5	14.8	13.6	ns	14.9	-	ns	ns	ns	ns	ns	ns
15.3	ns	ns	15.3	14.3	ns	10.9	14.6	13.7	15.0	15.8	ns	ns	ns	16.2	15.0	15.2	ns
15.6	ns					10.8		13.7									
15.5	ns					10.9		13.6									
15.4	ns	ns	15.7	14.2	ns	10.6	15.3	13.8	14.5	16.5	ns	ns	ns	ns	14.9	15.3	ns
15.6						10.6		13.6									
15.0						10.6		13.6									
15.1	ns	ns	15.5	15.0	ns	11.8	15.3	13.7	14.2	16.5	ns	ns	ns	ns	14.2	15.2	ns
14.8	15.3	ns	ns	14.7	ns	10.4	15.7	12.6	14.4	ns	ns	ns	ns	ns	14.5	15.0	15.1
						10.6		13.6				16.5					
						12.6		13.8				ns					
14.0	15.3	ns	ns	15.1	ns	10.6	16.0	13.6	13.9	ns	ns	16.0	ns	ns	15.0	15.8	15.0
14.2	16.0	ns	ns	ns	15.4	10.8	ns	13.7	16.2	ns	ns	15.2	ns	15.6	16.1	ns	15.5
15.2	15.5	ns	ns	ns	ns	10.7	ns	15.0	ns	ns	?	14.6	ns	15.4	ns	ns	ns

64

Measurements on MF 1929 plates

JD	Plate No	179	202	205	311	BH	limit
2425705.	WF 12947	12.9	15.3	15.1	ms	13.8	ms < 13.5
706	12957	13.1	15.2	15.3	ms	13.9	ms < 15.2
717	13036	13.2	15.1	15.2	15.1	13.9	
720 .507	13038	—	—	—	—	—	
535	13039	—	—	—	—	—	
571	13040	13.5	15.0	14.2	15.0	13.9	
.603	13041	—	—	—	—	—	
.634	13042	—	—	—	—	—	
741.	13091	—	—	—	—	—	
742	13103	12.8	13.9	14.3	14.5	13.6	
745	13115	12.8	14.2	14.0	14.7	13.3	
795	13301	13.1	15.3	13.9	15.0	14.4	

68

	Plate No	203	202	205	311	
24 11881	B 6073	ms L 14.5	13.8	15.2	ms L 14.6	req 202 b > a
12631	7595	15.3	13.8	15.7	14.5	
12677	10060	ms L 15.5	15.6	ms L 15.5	ms L 14.4 ^{15.0}	
13290	12917	14.8	14.3	15.4	ms L 15.0	
13346	13490	ms L 15.4	15.7	14.7	15.1	
13348	13532	14.8	ms L 15.3	ms L 15.5	14.7	
13376	13867	15.3	14.1	13.7	15.2	
13383	13983	ms L 15.0	14.0	13.8	ms L 15.1	
13409	14290	ms L 14.8	14.3	ms L 14.7	ms L 14.5	
13702	15943	15.7	15.2	13.8	ms L 15.5	
13709	15988	15.8	13.8	15.1	—	req 202 b = van
13730	16442	15.9	14.8	15.5	15.0	
13758	16879	15.3	15.7	15.2	ms L 14.5	
13797	17283	ms L 15.7	14.7	15.5	ms L 15.1	
13833	17503	ms L 15.2	15.2	14.5	15.1	
14036	18882	15.3	14.6 ^{16.0}	14.9	14.6	
14055	19062	ms L 15.5	14.4	15.8	ms L 15.4	
14070	19195	ms L 15.1	14.8	ms L 14.7	—	
14084	19439	ms L 15.7	14.9	15.5 ^{16.0}	ms L 15.2	
14085	19481	ms "	14.9	15.7	ms L 15.4	
14086	19506	15.8	ms L 14.4	ms L 15.0	ms L 14.8	

202

MF 10265

a' 13.9

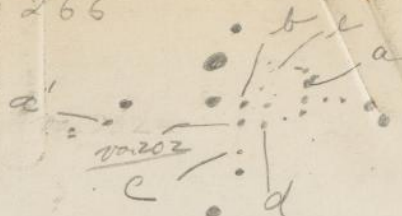
a 14.3

b 14.9 (red)

C 15.3

d 15.8 or 9

2 16.5



205

MF 10265

a 13,5

b 13.9

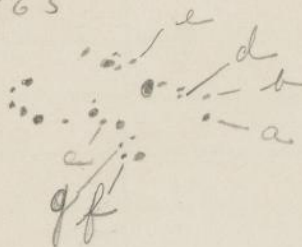
c 14.7

d 15.4

2 15.9 - 15.9

16.1.

g 16.6

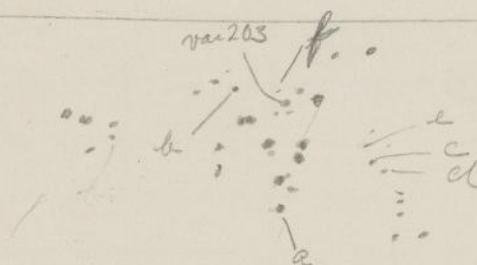


311MF 10671

a' 14.6
 a 15.4
 b 15.4
 c 15.8
 d 16.2
 e 16.4

203

a 14.5
 b 15.0
 c 15.7-
 d 15.7+
 e 16.1
 f 16.3

MF 10265

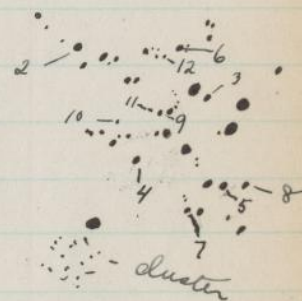
70

	Plate No	Limiting Mag	✓	✓	✓	✓	✓
	81	62	257	264	162		
2413 785	X 7832	ms < 16.5	ns	16.3	16.0	13.6	ns
14099	8721	<i>Draken</i>					
14099	8723	^{15.7} ms	—	14.3	ns	13.9	ns
137	8765	< 16.5	—	15.7	—	14.1	15.5
438	9167	16.5	ns	15.7	15.4	14.3	ms
808	9565	16.5	—	ns < 15.5	14.2	15.8	—
870	9899	< 16.5	ns	14.7	16.6	16.0	ns
879	9926	< 16.5	ns	15.4	ns	14.9	ns
15561	10251	16.5	ns	16.3	ns	13.8	ns
905	10476	< 16.5	—	14.5	ns	14.7	15.5
908	10495	< 16.5	ns	14.3	ns	15.1	15.6
910	10500	< 16.5	ns	14.4	ns	15.2	14.7
911	10507	< 16.5	ns	14.4	ns	15.5	15.2
929	10569	"	ns	16.0	ns	13.9	—
931	10574	"	ns	16.0	ns	14.5	—
932	10578	"	ns	16.2	ns	13.8	15.7
933	10583	"	ns	16.1	ns	13.9	15.8
934	10588	"	ns	16.4	ns	14.0	15.8
16638	10822	"	—	14.4	—	14.8	ns
639	10827	"	—	14.7	—	14.3	ns
640	10833	"	—	14.8	14.6	14.1	ns
640	10834	"	—	15.0	14.2	14.1	ns
640	10835	"	—	14.7	14.2	14.3	ns
640	10836	15.8	ns	14.8	14.4	14.3	ns
641	10837	< 16.5	ns	15.1	—	14.4	ns
642	10844	"	—	15.2	14.8	14.4	ns
643	10849	"	—	15.2	—	14.3	ns
645	10857	"	—	15.0	14.4	14.0	ns
647	10868	"	—	15.3	14.2	14.1	ns

	✓	✓	✓	✓	✓	✓
339	8	265	120	84	85	203
15.6	15.3	ns	^{25.7} 13.9	14.4	14.3	15.3
15.4	14					
15.2	14.0	ns	14.2	15.5	14.7	ns < 15.0
—	13.9	13.7	15.4	15.6	15.4	15.2
15.4	15.6	13.6	ns	15.6	14.5	—
15.6	14.8	ns	15.5	15.2	15.7	15.4
15.6	15.6	16.8	ns	15.9	15.1	16.1
15.4	15.6	ns	ns	15.6	14.8	—
14.8	15.1	14.4	ns	14.4	14.4	16.3
15.2	14.2	15.7	15.5	15.9	14.3	15.1
15.0	14.4	15.4	15.4	15.8	14.3	—
14.8	14.3	15.4	15.6	15.7	14.1	—
14.8	14.5	15.9	15.4	15.7	13.6	ns
15.4	—	16.5	15.0	15.8	14.4	—
15.4	—	16.5	15.2	15.9	14.6	—
16.0	15.2	16.0	15.6	15.6	14.5	—
16.0	15.1	16.5	15.4	15.8	14.4	—
15.9	14.9	ns	15.7	16.0	14.9	—
16.1	15.8	ns	15.4	^{15.1} 14.4	14.4	15.5
16.1	15.6	16.5	15.7	15.1	15.1	15.5
16.8	15.4	ns	15.5	15.1	15.0	15.6
16.2	15.6	16.5	15.7	15.0	15.2	15.8
15.9	15.9	ns	16.0	15.1	15.5	—
16.1	15.7	ns	15.9	15.1	15.3	—
16.1	15.5	16.6	15.4	15.2	15.1	15.5
15.9	15.7	16.7	15.2	15.1	14.7	15.6
15.6	15.5	ns	15.5	15.1	15.2	15.7
16.1	15.6	ns	15.6	15.0	15.2	15.5
15.6	15.7	ns	15.7	15.1	15.5	15.4

Sequence moved
from 35 Ks
Marked on MF10238

- 1 12.5
- 2 13.0
- 3 13.5
- 4 13.7
- 5 14.0
- 6 14.2
- 7 14.5
- 8 14.9
- 9 15.3
- 10 15.7
- 11 16.1
- 12 16.4



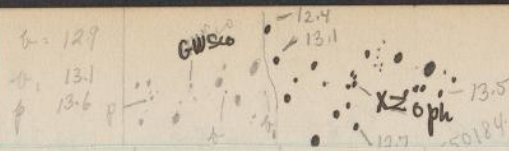
I had some
difficulties using
this sequence on
plates, scale large
& steps between listed
as much larger
also *6.75 not used
+ *12 seemed to vary
sometimes > 11

	Plate No	Limiting Mg	81	62	257	264	162
2417417	X 11294	16.5	14.3	14.1	14.8	15.0	ns
418	11299	"	14.2	14.0	14.8	15.0	14.5
434	11341	"	—	14.2	14.0	14.1	15.6
439	11346	"	—	14.5	13.8	14.2	15.5
440	11347	"	—	14.3	13.9	14.3	15.6
443	11356	"	—	14.3	—	14.2	15.6
814	11793	"	—	14.5	15.1	13.9	ns
18160	12138	"	16.3	14.5	ns	15.5	16.5
21465	13103	"	ns	15.4	15.1	16.2	ns
468	13104	16.5:		14.5			
476	13106						
470	1310 ⁵	16.5:	ns	14.6	15.4	14.6	ns

339	8	265	120	84	85	203
15.1	14.1	ns	ns	15.4	13.9	14.8
15.3	14.0	ns	ns	15.1	13.8	14.5
15.5	14.5	ns	ns	15.9	13.8	15.2
15.5	14.4	ns	ns	15.7	14.1	14.6
16.0	14.5	ns	ns	16.0	14.3	15.4
—	14.6	ns	ns	15.9	14.1	14.9
15.8	14.1	15.0	ns	14.4	16.0	15.4
15.2	15.0	15.8	15.5	14.7	15.4	16.0
15.2	15.4	ns	ns	14.5	15.5	—
15.6						
15.7						
15.5	15.5	ns	ns	14.8	15.6	—

b = 12.9
 13.1
 13.6
 GW 500
 12.4
 13.1
 13.5
 12.7
 550184

		QW Sec	X2 Oph		
24 753.532	M F 10666	13.1	13.3	242	388
755.529	671	13.3	12.7	246	184
759.474	683	13.0 ^B	13.0	253	278
25 530.613	11492	13.2	13.2	1291	326
382.499	645	13.1	13.0+	1585	495
388.467	658	13.1	13.2	87	362
84.529	674	13.1	13.3	89	324
85.496	687	13.1	13.0	91	191
86.432	699	13.0	12.4	93	026
88.459	713	13.0	13.2	96	403
89.484	728	13.0	13.3	98	327
410.487	798	13.0	13.6	1436	423
412.531	817	13.0+	13.1	1440	267
414.364	846	12.9	13.5	43	449
17.405	868	13.0	12.7	49	189
25 465.279	12147	12.1	13.0	1536	197
81.232	255	13.1	12.8	65	195
705.591	947	13.2	12.6	1973	078
706.522	957	13.1	13.1	74	459
717.607	13036	13.0+	12.3	94	541
720.507	038	13.1	12.6	2040	139
538	039	13.0	12.8		170
571	40	13.0	12.8		203
603	41	13.1	13.1		235
634	42	13.1	13.0+		266
742.563	13103	13.1	12.8	2040	188
45.447	115	13.0+	12.9	45	321
95.399	301	13.1	13.0	136	206



2426067.619	B 54048	13.1	12.84	263	085
75.586	073	13.0	13.6	45	350
89.517	104	12.9	12.3	70	526
90.578	114	13.0	12.9+	72	487
91.445	124	13.0	13.0	74	263
.477	125	12.9	13.0		285
.508	126	12.9	13.0		316
540	127	13.1	13.1		348
.572	128	13.0	13.1		380
604	129	12.9	13.2+		412
636	130	13.2	13.3		444
92.503	140	13.2	13.0	76	211
93.503	154	13.1	12.7	78	111
95.540	169	13.2	12.7	81	497
96.500	182	13.0	12.4	83	357
97.523	196	13.2	13.3	85	279
102.535	214	13.2	13.0	94	340
103.538	219	13.2	13.3	96	242
104.507	223	13.1	12.5	98	111
120.499	267	13.0	12.8	2727	148
123.462	294	13.2	13.2	32	360
130.324.363	324	13.4	12.9	45	108
131.493	341	12.9	12.8	47	139
144.365	357	12.9	13.1	70	376
146.397	370	13.0	12.9	74	187
147.482	383	13.2	12.8	76	172
148.480	389	13.2	12.4	78	069
153.437	405	13.5	12.6	87	075
154.391	418	13.2	13.2	88	479

		6-10810	x20j6		
26158.375	B54452	13.3	12.5	276	061
159.361	463	13.0	12.8	97	497
160.452	476	13.2	13.0	99	487
161.453	480	13.2	13.2	2801	388
174.332	494	13.3	12.7	25	063
175.363	503	13.1	12.2	26	544
176.360	572	13.0	13.1	28	440
177.396	521	13.2	12.9	30	376
181.369	547	13.1	12.8	37	497
188.345	587	13.1	13.1	50	321
202.246	610	13.2	13.6	75	467
204.259	614	13.2	12.9	79	280
231.249	663	13.1	13.0	2928	311
243.229	704	13.1	12.9	50	187
26441.540	55020	13.1	13.3	3310	431
52.550	043	13.3	13.1	30	438
60.596	106	13.1	13.1	45	231
74.471	159	13.0	13.5	70	351
75.492	162	13.1	13.1+	72	272
79.507	190	13.0	13.5	79	436
81.461	213	13.0	13.0+	83	189
84.497	247	13.1	12.9	88	474
86.465	267	13.1	13.0	92	241
502.432	299	12.9	13.0	3421	253
03.526	310	13.2	13.0+	23	247
04.426	321	13.3	12.5	25	046
05.410	334	13.1	13.0	26	480
07.487	351	13.0	13.2	30	356
08.479	360	13.0	13.1	32	248

		QW2m	XZoph	0.550129	
26 529.349	B55400			3470	211
30.367	405			72	129
34.346	414	BT		79	256
38.410	423			86	469
66.281	510			3537	281
71.272	533	BT		46	320
	554				
	575				
14 846.503	A 3698	—	12.3	-17765	522
878.498	3825		12.4	-17706	056
528	26	—	—	—	—
556	27	—	12.6		114
585	28	—	12.6		143
613	29	—	12.7+		171
642	30	—	12.9		200
672	31	—	12.9-		232
706	32	—	13.0+		263
20 692.659	11293	—	at edge 13.6	-7139	423
23 610.713	12506	—	—	—	—
647.492	587	—	—	—	—
.602	590	—	—	—	—
648.493	593	—	—	—	—
.603	596	—	—	—	—
890.699	896	—	13.5	-1326	243
909.728	925	—	12.2+	-1291	016
918.629	943	—	12.6	-1275	114
939.655	958	—	13.2-	-1248	285

A plate is \leq 10,

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		G.W.Sco	X20ph	δ 0.550184	
23 939.630	A 12971	—	—	—	
23 563.657	A 12383	13.0	12.2	-1920	0.11
577.569	417	13.2	12.7	-1895	1.68
581.583	427	13.1	13.3	-1888	3.31
589.688	448	—	—	—	—
604.543	485	13.4	13.2	-1846	1.83
644.574	580	13.3	12.2	-1773	0.51
24641.682	13659	13.5	13.1	39	2.25
644.679	682	13.4	13.3	44	4.71
682.584	832	13.2	13.5	113	4.14
727.626	937	—	—	—	—
733.618	958	—	—	—	—
762.496	14011	13.4	12.3	258	5.49
524	12	13.2	12.2	259	0.27
552	13	13.2	12.4		0.55
580	14	13.0	12.4		0.82
611	15	13.3	12.4		1.14
641	16	13.1	12.5		1.44

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MAGNITUDE ESTIMATES

INDEX

MWF 187 17^h 52^m - 36.4

Region

MF
No. pageB
No. page

Miscall

A BM Sco

- Sco 6,36

C FX Sco Per Km

FY " 6,36 13,20

SX " 6,36

FZ " 6,22 13,20

SV " 6,36

Nova³ " -

GG " 6,22 14,100

C CQ " -

Cepheid AB 914

A RY " -

SY " 13,20

BN " 13,20

Nova² " -

CR " 5,164

A BS " -

A TX " -

no variation

C GI " -

AI " 5,104

- "

C ACGrA -

RW " per Km.

FL Sgr Nova

KX " 5,82, 6,176

FT " 5,82 5,120 5,128

C ADGrA -

FU Sgr 5,74 5,120 5,128

AEGrA 5,170 14,112

AF " 5,170 14,112

C VY " -

	MF	B	Misall.
AGCA 5,178		14,112	
FV Sgr 5,82		5,120	5,128
K2 " 5,114		5,130	
C VZGA -			
C W " -			
C RR " -			
Nova 7 Sgr Nova			
C AHGA -			
WX " 5,162, 7,8		¹⁰⁶ 7,8	14,186
C - " -			
C AI " -			
Nova 6 Sgr Nova			
A FW " -			
FX " 5,154		13,72	
A FY " -			
A FZ " 6,22			
AKGA 6,78		7,96	
GG Sgr 5,154		13,72	
C WZGA -			
AL " 6,92		7,190	
XX " 6,92			
GH Sgr 6,134		13,48	
GI " 6,106		13,48	
A GK " -			
A RS " Perkin			
LL " 14,124		14,170	
LM " 14,124		14,170	
XYGA 14,148		14,170	
GL Sgr			
C XZGA -			

MWF 187 clude^x 17^h 52^m = 36° 4'

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HAS
Var. No.Bk Page
Position

A1	8,20	18 16 13 - 32 2.3	-	
2	8,20	18 5 2 - 31 59.8	-	
3	8,19	18 4.24 - 31 56.6	V738 Sgr +	
4	8,19	18 3 56 - 31 59.4	-	
5	8,19	18 3 10 - 31 57.2	-	
6	8,15	17 56 12 - 32 3.0	-	
6a	8,26	18 1 17 - 34 22.9	-	
7	8,16	17 53 20 - 31 54.6	-	
9	8,26	18 5 23 - 32 43.0	! 18.5 32. 32 44 13.5-17.5 HV 9288 = 3837	
10	8,27	18 4 34 - 32 45.0	-	
11	8,21	18 2 51 - 32 29.2	-	
12	8,21	18 3 35 - 32 25.1	-	
13	8,16	17 58 55 - 32 53.9	V1276 Sgr +	
14	8,14	17 56 31 - 32 32.4	-	
15	8,14	17 55 29 - 32 52.2	-	
16	8,33	18 9 24 - 33 47.0	-	
17	8,32	18 8 1 - 33 49.6	-	
18	8,30	18 8 50 - 34 5.4	-	
19	8,34	18 6 10 - 33 24.4	! 18 6 6 - 33 22 14.4-18 HV 9296 = 3852	
20				
21				
22	8,25	18 2 0 - 34 2.4	HV 9261 15.6-18 = 3772 !	
23	8,25	18 1 5 - 34 7.6	-	
24	8,23	18 1 51 - 33 21.7	HV 9256 15.8-17.6 3767 !	
25	8,22	18 0 3 - 33 20.6	HV 9239 15.5-17.3 3788 ! = V1815 Sgr	
26	8,22	18 0 40 - 33 32.1	-	
26a	8,23	18 0 32 - 33 27.8	-	
27	8,12	17 58 16 - 33 55.6	-	
28	8,11	17 57 36 - 33 47	V1008 Sgr +	
29	8,12	17 57 13 - 33 46.8	HV 9211 17.5-17.8 3681	
30	8,12	17 57 3 - 33 25.0	-	

p. 3712

A	31					
	32	8, 8	17 50 28 - 33 45.3	-		
	34	8, 9	17 50 38 33 57.0	-		
	35	8, 9	17 50 34 - 34 28	-		
	36	8, 6	17 44 35 - 34 0.4	-		
	37	8, 40	18 9 57 - 31 53.2	MV 9334	13.8-17.5	3423 !
	38	8, 38	18 8 17 - 32 35.3	-		
	39					
	40	8, 7	17 49 40 - 32 36.0	-		
	41	8, 7	17 47 47 - 32 17.7	-		
	43	8, 32	18 10 45 - 33 42.0	-		
	44	8, 33	18 9 41 - 33 39.6	-		
	45	8, 31	18 8 50 - 33 45.0	-		
	46	8, 32	18 8 13 - 33 35.8	-	mean	MV 9323 3402 15.5-17.1
	47	8, 36	18 6 12 - 34 9.4	-		
	49	8, 29	18 4 6 - 33 37.9	-		
	50	8, 10	17 51 35 - 33 44.1	V 71750 +	MV 9166	3598
	51	8, 46	17 38 49 - 34 6.2	V 49750 +		
	52	8, 38	18 6 22 - 32 27.9	-	mean	MV 9303 3861
	53	8, 35	18 4 50 - 33 4.6	-	mean	M 9784 3819
	54	8, 28	18 4 59 - 33 47.5	-		
	55	8, 25	18 1 47 - 34 18.2	MV 9257	3768	13.3-17.3 !
	56	8, 10	17 52 48 - 34 9.1	-		
	57					
	58	8, 40	18 10 1 - 31 52.0	-	mean	MV 9334 = 3423
	59	8, 39	18 8 29 - 31 49.4	-		
	60	8, 18	18 3 23 - 32 11.4	MV 9272	= 3797	14.8-17.3
	62	8, 17	18 0 52 - 32 7.6	-		
	63					
	64	8, 14	17 54 2 - 32 35.3	-		

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HHS
VAR. POSITION

A

65	8, 4p	18 11 47 - 83 55.3	Perseus HV 9364 = 3976
66			
67			
68	8, 28	18 5 6 - 83 42.2 -	
70	8, 11	17 56 40 - 83 59.7	HV 9205 = 3665 14.8-15.8
71	8, 39	18 10 23 - 82 30.7 -	
72	8, 36	18 8 32 - 83 11.4 -	
73			
74	8, 27	18 2 41 - 83 13.8 -	
75			
76	8, 16	17 58 17 - 82 43.3	HV 7864 = 3707 12.0-14.5
77			
78			
79			
80	8, 31	18 8 45 - 83 33.0	perseus! HV 9323 = 3902 15.5-17.1
81	8, 34	18 5 58 - 83 14.0	HV 9245 = 3849! 13.8-17.5
82	8, 17	18 1 59 - 82 15.8	perseus HV 9260 = 3771
83			
84	8, 23	18 1 58 - 83 31.5 -	
85			
86	8, 24	18 0 54 - 83 52.3 -	
87	8, 13	17 58 34 - 83 59.1	perseus HV 9222 = 3712 16.5 [18
88			
89			
90	8, 34	18 7 8 - 83 32.0 -	
91	8, 35	18 5 38 - 83 12.1 -	
92			
93	8, 24	18 2 38 - 84 68	HV 9268 = 3783 16.7-18
94	8, 13	17 52 4 - 83 19.7 -	
95			

A	96	8, 15	17 57 51 - 32 68 -	
	97	8, 1	17 48 48 - 33 133 -	
	98			
	99	8, 39	18 10 13 - 32 450	mean HV 9338 = 3430 !! 17.3 [8]
	100	8, 36	18 8 54 - 33 74	mean 9324 = 3409 !! 14.7 [8]
	101	8, 33	18 9 59 - 33 43.6 -	
	102	8, 21	18 6 34 - 31 58.6	mean HV 9300 = 3858 17.0-17.7
	103	8, 20	18 5 26 - 32 34 -	V1180 Sep +
	104			
	105	8, 29	18 4 44 - 33 26.9 - -	
	106	8, 29	18 4 5 - 34 87 -	
	108	8, 9	17 51 12 - 34 13.9	- V716 Sco +
	109	8, 6	17 45 50 - 34 9.8 -	
	110			
	111	8, 35	18 6 59 - 33 150 -	
	112			
	113	8, 30	18 6 33 - 34 2.8	HV 9301 = 3860 14.8 [18.3!]
	114	8, 18	18 0 27 - 32 15	HV 9243 = 3745 16.3 [18.3!]
	116	8, 15	17 57 36 - 32 22.2	HV 9213 = 3691 14.5 [16]
	118			
	120			
	121	8, 38	18 8 17 - 32 35.3 -	
	122	8, 37	18 8 25 - 33 16.2 -	
	123	8, 37	18 6 49 - 32 52.2 -	
	124	8, 31	18 8 53 - 34 2.2	mean HV 9325 = 3406! 13.6 [8]
	126	8, 28	18 3 20 - 33 25.4 -	
	127	8, 22	17 59 9 - 33 27.9 -	
	128	8, 24	18 0 15 - 33 58.3 -	
	129	8, 11	17 54 40 - 34 3.3 -	
	130			

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A

NHS Var No	Position Rht. Page	MF & A mag. Estimates
131	8, 8	
132		
133	8, 40	
135		
136	8, 30	
137	8, 18	
138		
139	8, 37	
140	8, 13	
141	8, 10	
142		

17 50 32 - 33 37.7 --

18 9 25 - 32 0.6 --

18 5 15 - 34 13.8 --

17 59 26 - 31 53.1 --

18 7 1 - 32 52.2 --

17 54 23 - 32 59.7 - *perum* HV 9177 = 3623!! 14.9 - 16.0

17 54 56.3 - 34 12.0 --

C

1	8, 106	23, 120
2	9, 62	23, 120
3	8, 113	23, 136
4	8, 85	23, 136
5	8, 84	23, 136
6	8, 84	26, 136
7	8, 86	26, 136
8	8, 86	26, 136
9	8, 87	26, 136
10	8, 80	23, 38
11	8, 81	23, 38
12	8, 80	23, 38
13	8, 82	23, 38
14	8, 81	23, 38
15	8, 75	23, 38
16	8, 75	23, 38

C	17	8,77	23,38
	18	8,77 8,77	23,22
	19	8,78 8,74	23,22
	20	8,70	23,6
	21	8,64	23,6
	22	8,64	23,6
	23	8,66	23,6
	24	8,62	22,74
	25		
	26	8,60	22,74
	27	8,56	22,74
	28	8,58	22,74
	29	8,56	22,60
	30	9,38	22,60
	31	9,40	22,60
	32	8,115	23,108
	33	8,116	23,108
	34	8,111	23,120
	35	8,112	23,120
	36	8,112	23,108
	37	8,118	23,96
	38	8,117	23,96
	39	8,115	23,96
	40	8,114	23,96
	41	8,119	23,108
	43	8,90	23,82
	44	8,98	23,54
	45	8,66	23,54
	46	8,67	22,88
	47	8,67	22,88

1415 POSITION
VAR. BK. PAGE

C	47a	8,68	22,88
	48	8,59	22,88
	49	8,58	22,88
	50	8,59	22,74
	51	8,121	23,96
	52	8,121	23,96
	53	8,122	23,96
	54	8,122	23,96
	55	9,65	23,82
	56	8,104	23,82
	57	8,100	23,68
	58	8,102	23,68
	59	8,72	22,88
	60	8,73	22,88
HV. 6656	61	8,53	
HV 10505	62	8,50,55	
HV. 6645	63	8,51	
	64		
HV 10485	65		
HV 10481	66		
	67	8,57	22,74
	68	8,53	
	69	8,50,54	
	70	8,109	23,108
	71	8,111	23,120
	72	8,116	23,108
	73		23,120
	74	8,114	23,96
	75	8,102	23,96
	76	8,103	23,96

V 35450

V 54960

V 344500

CDB No 145

V 533500 (V 529??)

Susp

C	77	8,103	23,96
	78	8,87	23,136
	79	8,81	23,38
	80	8,82	23,38
	81	8,82	23,22
	82	8,100	22,88
	83	8,69	23,6
	84	8,64	23,6
	85	8,65	23,6
	86	9,70	22,60
	87	9,40	22,60
	88	8,121	23,96
	89	8,118	23,96
	90	8,103	23,96
	91	8,94	23,68
	92	8,95	23,68
	93	8,96	23,54
	93a	8,97	23,54
	94	8,95	23,68
	95	8,74	23,22
	96	8,79	23,22
	97	8,69	23,22
	98	8,65	23,6
	99	8,57	22,74
H6626	100	9,42	5,194
	101	8,72	22,88
	102		
6621	103	9,38	—
	104	8,96	23,54
	105	8,109	23,108

QUSco

this H V 6621 CDB 2349 yes QUSco

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	HWS Var.	Position
C	106	8, 109 23, 108
	107	8, 108 23, 120
	108	8, 110 23, 120
	109	
	110	8, 107 23, 120
	111	8, 106 23, 120
	112	8, 84 23, 136
	113	8, 85 23, 82
	114	8, 61 22, 74
	115	8, 120 23, 008
	116	
	117	8, 98 23, 68
H.V. 10499	118	8, 58, 55
	119	8, 107 23, 120
	120	8, 118 23, 96
	121	23, 96
	122	8, 86 23, 136
	123	
	124	8, 99 23, 68
	125	8, 101 23, 68
	126	8, 78 23, 22
	127	8, 93 23, 54
HV 9162 wsl	128	8, 70 23, 6
	129	8, 70 23, 6
	130	8, 66 23, 22
	131	8, 51, 55 22, 60
	132	9, 40 22, 60
	133	8, 111 23, 120
	134	8, 117 23, 108
	136	8, 83 23, 120

V5455w

V6925w

C	137	8,83	23,120
	138	8,104	23,82
	139	8,88	23,82
	140	8,89	23,82
	141	8,91	23,82
	142	8,105	23,68
	143		23,38
	144	8,80	23,38
	145	9,63	23,38
	146	8,79	23,22
	147	8,97	23,54
	148	8,93	23,54
	149	8,68	23,22
	150	8,71	23,54
	151	8,73	22,88
6658	152	8,53	5,194
6603	153	9,41	
	154	8,107	23,120
	155	8,113	23,136
	156	8,113	23,136
	157	8,114	23,120
	158	8,85	23,136
	159	8,122	23,82
	160	8,123	23,96
	161a	9,64	23,68
	161	8,106	23,68
	162	8,71	23,54
	163	8,119	23,108
	164	9,65	23,82
	165	8,101	23,68
	166	8,120	23,96

V3065W

OU Sco

100

C

HHS No.	Position	
167		23,96
168	8,92	23,82
169	8,92	23,38
170	8,92	23,38
171	8,91	23,82
172	8,99	23,68
173	8,102 8,102	23,68
174	8,101	22,88
175	8,76	23,38
176	8,68	23,22
177	8,58	22,88
178	9,38	22,60
179	9,41	5,196
181	8,71	23,54
182	9,69	22,60
183	9,37	= CDB No 215
184	8,88	23,136
185	8,89	23,82
186	8,94	23,68
187	9,71	22,88 CDB No 388
188	9,37	is this HV 6581 CDB 261 ✓
189	8,112	23,120
190	8,120	23,108
191	8,91	23,82
192	8,83	23,22 no var.!
193	8,61	22,74
194	8,115	
195	8,105	23,68
196	8,108	23,120
197	8,89	23,82

HV 6610

HV 6581

C	198	8,90	23,82	
	199	8,105	23,68	
	200	no var		
	201	8,99	23,68	
	202	8,69	23,22	
	203	8,67	22,88	
6663	204	8,52		
	205	8,57	22,74	
	206	8,108	23,108	
	207	8,110	23,108	
	208	8,116	23,108	
	209	8,95	23,68	
	210	8,73	23,22	
	211	8,93	23,54	
	212	8,10 8,72	22,88	
AC02A	213	9,68	23,6	
	214	8,63	23,6	
	215			
	216	9,39	22,60	
	217		23,120	no var
	218a	9,66	23,68	
	218	8,94	23,68	
	219	8,62	22,74	
	220	8,60	22,74	
	221	9,71	22,88	
HV 10502	222	8,50		
HV 10482	223	9,37	= 744 CDB 404	
	224			
	225	8,117	23,108	
	226	8,119	23,108	
	227	8,100	23,68	

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	HHS Vgn No	Position Rn Page	MF mag. estimat.	Bpl mag. estm.	Miscella A X
C	228	8, 65	23, 6		
	229	8, 60	22, 74		
	230	9, 39	22, 60		
	231	9, 69	22, 74		
	232	9, 72	23, 120		
	233		23, 22	varil?	
	234	8, 110	23, 108		
B. 711 Sqr	1	8, 166	14, 124	14, 170	
V 696 "	2	8, 42, 158	6, 134		
V 664 "	3	8, 45, 217	6, 134		
V 656 "	4	8, 45, 216	6, 134		
V 651 "	5	8, 46, 216	6, 134		
HV 7233	6	9, 47	6, 148		3781
V 643 Sqr	7	8, 156	5, 138	13, 60	
V 633 "	8	8, 157	6, 148	13, 48	
V 620 "	9	8, 214	6, 148	13, 48	
V 596 "	10	8, 211	5, 66, 6, 148	13, 36	
V 571 "	11	8, 212	5, 66	5, 98	
V 420 Sco	12	8, 181	5, 104	13, 20	
	13				
V 697 Sqr	14	8, 162	6, 106		
V 661 "	15	8, 155	6, 120	13, 48	
V 594 "	16	9, 4	5, 50	5, 98	
V 579 "	17	9, 6	5, 50	5, 98	
V 563 "	18	9, 11	5, 50, 6, 162		
V 557 Sqr	19	9, 10	5, 50, 6, 162	7, 190	
V 384 Sco	19a	9, 10		7, 190	
V 542 Sqr	20	9, 12	5, 58, 6, 162	5, 120	5, 128

v 541 Sq				
B	21	9,8	5,586,162,5,120	5,128
v 539 "	22	9,8	5,58,462,5,120	
v 448 Sco	23	8,205	5,74,6,162	
v 710 Sq	24	9,46	6,106	
v 649 "	25	8,144	5,146,2,22	13,60
v 635 "	26	8,1048	5,138	13,60
v 637 Sq	27	8,1047	5,138	13,72
v 632 "	28	8,138	5,146	13,72
v 618 "	28a	8,140	5,146,7,36	13,72
v 612 "	29	8,141	5,138,7,36	13,72
v 553 "	31	9,17	5,186	5,130
no var	32		5,82,6,176	
	33			
	35	8,182	5,82,6,176	
no var	36		5,82	
v 403 Sco	37	9,47	6,22	
v 396 Sco	38	8,180	6,36	13,20
v 398 Sco	39	8,176	6,8 ²²	13,20
HICa	40	8,131	5,162	
v 636 Sq	41	8,138	5,154,7,36	
v 628 "	42	8,139	5,154 ^{7,190}	13,72
HV 7162	43	9,18	5,106,6,190	7,52
FVGA	44	9,26	5,170	7,106
FT "	45	9,26	5,170,7,8	7,106
ER "	46	9,14	5,170	14,112
EO "	47	9,32	5,170,6,190	14,112
FFCA	48	9,30	5,170,6,204	7,106
FGCA	49	9,48	5,178	
ES "	50	9,31	5,170	7,186
v 439 Sco	51	8,194	6,8	14,112

omitted by mistake from HA 90 1127

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MF

B

Miscell

HV 7014 B	53	8,188	6,50	14,100	
V 404 Sco	55	8,187	6,22	13,20	
ITGA	56	8,168	14,148		14,186
ILGA	57	8,133	6,92	7,96	
IPGA	58	8,170	14,148		
INGA	59	8,170	6,78		
HTGA	60	8,128	6,78		
HLGA	61	8,130	6,78	7,96	
GRGA	62	8,127	5,162	7,106	
GGGA	63	9,28	5,162	7,96	
FRGA	64	9,32	6,64	7,96	
FOGA	65	9,33	6,64	14,112	
ELGA	66	8,197	5,178	14,112	
EGGA	67	8,191	5,178	14,112	
DWGA	68	8,191	5,178	14,112	
EE "	69	8,191	6,64	14,112	
V 435 Sco	70	8,189	6,58	14,100	
H.V. 7326	71	8,44,158	6,134		V 1152 Sgr
Sus.	72	8,26,213	6,148		Sus
V 576 Sgr	74	8,212	5,66,6,148		
V 712 "	75	8,165	14,124		
V 709 Sgr	76	8,166	14,124		
HV 7343	77	8,166	6,120		3913
V 685 Sgr	78	8,160	6,120	13,48	20
V 670 Sgr	79	8,217	6,120	13,48	
V 666 Sgr	80	8,155	6,120		
V 617 Sgr	81	8,215	5 114,6,148	13,36	5,130
V 608 Sgr	82	8,219	5,50	5,98	
V 558 Sgr	83	9,8	5,58,6,162	7,190	
V 717 "	84	8,164	14,124	14,170	

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v 702 Sqr				
B 86	8,162	6,106		
v 703 "	87	8,152	6,106	
v 695 Sqr	88	8,153	6,106	
v 699 Sqr	89	8,154	6,106	13,48
v 609 Sqr	91	8,219	5,114	5,130
v 562 Sqr	92	9,13	5,106, 6,176	
v 446 Sco	93	8,203	5,82, ^{1,190} 6,176	7,190
v 400 Sco	94	8,179	6,22	13,20
Susp	95		14,124	
HV 7367	96	8,167	14,124	3964
v 694 Sqr	97	8,150	6,92	
v 665 Sqr	98	8,142	5,154, 7,22	
v 650 Sqr	99	8,144	5,146, 7,22	
HV 7246	100	9,46	5,154, ^{7,36} 7,22	7,52 3790
v 621 Sqr	101	8,140	5,154	13,72
v 584 Sqr	102	9,18	5,106, 6,190	
	103		5,106	
IQA	104	8,168	5,106 , 14,148	
IRA	105	8,169	14,148	
HV 7362	106	8,169	14,148	3936
IRA	107	8,135	6,92	7,96
HZA	108	8,134	6,92	
HV 7283	109	9,46	6,78, 6,92	7,52 3834
HNA	110	8,131	6,78	
FWA	111	9,25	5,162, 7,8	7,106
FUA	112	9,28	5,162, 7,8	7,96
var?	113		6,64	
ENA	118b	9,45	6,64	
EHA	114	8,197	5,178	
v 422 Sco	115	9,45	6,50	
v 417 Sco	116	8,184	6,22	14,100

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MF

B

Mital.

HV 7016
B

V452 Sco

	117	9,45	6,22	
V 395 Sco	118	8,175	6,58	14,100
V 674 Sq2	120	8,161	6,120	13,48
V 639 "	121	8,156	5,138	13,60
V 634 "	122	8,149	5,138	13,60
V 613 "	123	8,215	5,114	5,130
V 591 "	124	8,209	5,66	5,98
V 592 "	125	8,220	5,50	5,98
V 581 Sq2	126	8,210	5,66	5,98
V 555 "	127	9,12	5,50	5,98
V 534 "	128	8,208	5,74	5,120
V 530 "	129	8,205	5,74	5,120
V 533 Sq2	130	8,205	5,74	5,120
V 528 "	131	8,202	5,82	5,130
HV 7053	132	8,202	5,82, 6,176	5,130
	133			
V 421 Sco	134	8,183	5,82	5,120
V 414 "	135	8,184	5,82	5,120
V 399 "	136	8,180	6,36	13,20
V 393 "	137	8,177	5,86-97	
	138			
	139			
V 390 Sco	140	8,176	6,36	13,20
V 389 "	141	8,174	6,22	13,20
V 641 Sq2	142	8,145	5,146	13,60
V 607 "	143	9,21	5,146	13,72
HQ CA	144	8,129	6,78	
GI "	145	9,23	5,162, 7,8	7,106
GR CA	146	9,28	5,162, 7,8	
FP "	147	9,29	5,170	7,106

8599

5,78-81
5,110-113

7,92, 94, 66

no var	148	9, 47	6, 204	
EYQA	149	9, 14	5, 66	5, 130
Susp	149a	9, 14	5, 170, 6, 190	
EWQA	150	9, 30	5, 170	7, 106
no var	151	8, 199	5, 178	
GLQA	152	9, 22	5, 162	
H.V. 7145	153	9, 19	5, 114, 6, 190	
v 698 Sqr	154	8, 42	6, 134	
no var	155	8, 43	6, 134	
no var	156		6, 134	
v 671 Sqr	157	8, 217	6, 134	13, 48
v 627 "	160	8, 46, 213	6, 148	13, 48
v 604 "	161	8, 212	5, 66, 6, 148	13, 36
v 721 Sqr	163	8, 163	14, 124	14, 170, 14, 186
v 692 "	165	8, 152	6, 120	
v 684 "	166	9, 48	6, 120	
Susp	166a	9, 58	6, 120	
HV 7268	167	7, 48	5, 138, 7, 22	
Susp	168	9, 49	5, 138	7, 22
v 638 Sqr	169	8, 148	5, 138	7, 36, 0, 60
v 614 "	170	8, 218	5, 114, 6, 204	
no var	170a	9, 61	6, 204	
H.V. 7154	171	9, 6	5, 50, 6, 204	13, 36
v 585 Sqr	171a	9, 61	6, 204	13, 36
v 577 "	172	9, 5	5, 50, 6, 204	
def	173	9, 11	5, 50	
v 699 Sqr	174	8, 167	6, 106	13, 60
HV 7338	175	8, 153	6, 106	
v 683 Sqr	176	9, 49	6, 106	6, 118
v 657 "	177	8, 144	5, 146, 7, 22	
v 642 "	178	8, 145	5, 146, 7, 36	
H.V. 7160	184	9, 20	5, 114, 6, 190	13, 36
no var	185	9, 15	5, 106, 6, 176	

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Position MF B misc

V 444 S co	186	8,202	5,82,6,176	13,36
V 434 S co	187	8,195	6,8	13,36
V 419 S co	188	8,186	6,22	13,20
HV GA	189	8,133	6,92	
HU GA	190	8,128	6,78	
HO GA	192	8,130	6,78	
HV 7243	193	8,126	6,64	
FYGA	194	9,25	5,162	9,106
	195			
no var	196	8,196	5,178	
	197			
V 406 S co	198	8,188	6,50	14,100
V 705 Sqr	199	8,42	14,124	
no var	200	8,159	6,134	
HV 7270	201	8,157	6,148	
V 644 Sqr	202	8,157	6,148	
V 619 Sqr	203	8,244	6,148	13,48
V 529 Sqr	205	8,207	5,74	5,120
V 386 S co	207	8,174	14,208,7,60	
V 615 Sqr	208	8,141	5,114,6,204	13,36
V 605 Sqr	209	8,219	5,50	5,98
V 573 Sqr	210	9,5	5,50,6,204	
V 549 Sqr	211	9,9	5,58	5,98
V 538 Sqr	212	9,10	5,58	5,98
V 540 "	213	9,12	5,58,6,862	
	214			
V 536 Sqr	215	8,201	5,106,6,176	5,130
V 442 S co	216	8,204	5,74,6,162	
V 440 S co	217	9,206	5,74	5,120
Snap	218	8,182	5,74,6,162	
pro ray	218a		6,162	

			MF	B	Muscul
V426 Sco	219	8,182	5,74	5,120	
van?	220	8,180	6,36		
HV 6916	221	8,177	6,36		
V 654 Sgr	222	8,137	5,154	13,72	
	223				
HK CrA	225	8,126	6,78	7,96	
HV 7498	226	9,18	5,106, 13,84, 6,190	7,68-73	7, 74-90 6,118
JV CrA	227	8,192	6,50	14,100	7,92,66,120,130, 15 180
V 436 Sco	228	8,193	6,50	14,100	
V 433 Sco	229	8,190	6,50		
V 411 Sco	230	8,186	6,22	13,20	
V 388 Sco	231	8,175	6,50	14,100	
V 385 Sco	232	9,55	6,50		6,62
V 675 Sgr	233	8,44	6,233		6,146
Surp	234	8,160	6,120		
V 657 Sgr	235	8,155	5,138, 7,22		
V 582 Sgr	236	8,210	5,66, 6,148		
V 407 Sco	237	8,179	6,36	13,20	
V 391 Sco	238	8,176	6,36, 14,193	13,20	14,186
HV 7303	239	8,151	6,106	13,60	
V 667 Sgr	240	8,142	5,146, 7,22		
V 631 Sgr	241	9,49	5,138, 7,36		
H.V. 7216	242	9,50	5,114, 6,204	13,72	
V 611 Sgr	243	8,141	5,138, 7,36	13,72	
V 601 Sgr	244	8,220	5,50, 6,204		
V 640 Sgr	245	8,137	5,154	13,72	
G2 CrA	246	8,132	5,162	7,106	
GX CrA	247	9,22	5,162, 7,8		
V 629 Sgr	248	8,139	5,154	13,72	
GSGA	249	9,21	5,154	13,72	

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Position MF B Miscel

ET CrA					
8 251	9,31	5,170	7,106		X
V 550 Sq2	252	9,13	5,82,6,176	13,36	
V 431 Sco	253	8,194	6,8	13,36	
V 412 "	254	8,183	5,82 ²⁰⁴ 6,176		
HP CrA	255	8,129	6,78		
HH CrA	256	8,126	6,64		
FL CrA	257	9,33	6,64		
V 408 Sco	258	8,188	6,50	14,100	
259	9,59	5,146,736			
V 560 Sq2	260	9,16	5,106	5,130	
V 652 Sq2	261	8,216	6,134	13,48	
V 626 Sq2	262	8,214	6,148,7,190	7,190	
V 624 "	263	8,215	5,114	5,130	
V 606 "	264	8,213	5,66	5,98	
V 574 "	265	9,50	5,66,6,148		
V 556 "	266	9,7	5,58	5,98	
V 394 Sco	267	8,181	6,36	13,20	
V 669 Sq2	269	9,50	6,120	13,48	
V 690 Sq2	270	9,51	6,106	13,60	
V 663 Sq2	271	8,143	5,146	13,60	
V 646 Sq2	272	8,148	5,138,7,22	13,60	
V 616 "	273	9,20	5,146	7,36	
V 603 "	274	9,19	5,114	5,130	
V 572 "	275	9,14	5,106	5,130	
V 565 "	276	9,15	5,106	5,130	
DU CrA	277	8,200	6,8	14,112	
V 437 Sco	278	8,203	5,82,6,176		
V 427 Sco	279	8,195	6,8	13,36	
IS CrA	280	9,42	14,148,143	14,186,	
HS CrA	281	8,135	6,78	7,96	

FMCA				
283	9, 35	5, 178	14, 112	
EUCA	284	9, 34	6, 64	14, 112
EVCa	284a	9, 34	14, 148	
EQCA	285	9, 31	5, 170	14, 112
V 392 Sco	286	9, 51	6, 50	14, 100
V 545 Sgr	287	9, 51	5, 58, 6, 162	13, 36
HU 7231	288	9, 52	5, 162, 7, 8	
GPA	289	9, 23	5, 162, 7, 8	
V 707 Sgr	290	8, 162	6, 120	
V 647 Sgr	291	8, 156	5, 138, 7, 22	
V 586 "	292	8, 209	5, 66	5, 98
novae	293	9, 52	5, 74, 6, 162	
V 561 Sgr	294	9, 7	5, 58	5, 98
V 537 "	295	9, 9	5, 58	5, 98
V 402 Sco	296	8, 178	6, 36	13, 20
KP Sco	297	4, 128	4, 126	4, 127
V 680 Sgr	298	8, 151	6, 106	13, 60
V 700 Sgr	299	8, 149	6, 92	
IM CA	300	8, 150	6, 92	7, 96
Susp	302	9, 52	6, 92	
IKCA	302a	9, 53	6, 92	
Sam. onee	303	9, 53	6, 78	
HXCA	304	8, 127	6, 78	
HMCa	305	8, 130	6, 78	7, 96
GMCA	306	9, 27	6, 64	7, 96
HU 7089	307	9, 53	5, 106, 6, 176	
GTCA	308	9, 54	6, 64	
EXCA	309	9, 35	5, 178	14, 112
def	309a		6, 190	
V 551 Sgr	310	9, 59	5, 76, 6, 162, 5, 120	5, 128
	311		14, 124	

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Positions MF B Misal

V 708 Sqr	312	8,163	6,120		
V 706 "	312a	9,55	6,120		
V 673 Sqr	313	8,161	6,120	13,48	
	314				
var?	315		5,58		
V 677 Sqr	316	8,154	6,106		
V 686 "	317	8,151	6,106	13,60	
HV 7238	318	9,54	5,154, 7,36		
GH CA	319	8,127	5,162	7,106	
	320				
EP CA	321	9,32	5,170, 6,190		
no var	323	9,57	5,178, 6,8		
V 383 S _{co}	325	8,189	6,50	14,100	6,62, 14,126
V 719 Sqr	326	8,163	14,126		
V 676 Sqr	327	8,161	6,120	13,48	
no var	328	9,57	5,74, 6,162		
V 578 Sqr	329	8,208	5,66	5,98	
V 432 S _{co}	330	8,206	5,74, 6,162		
var?	331		5,82		
no var	332	8,198	5,178, 6,20		
DX CA	333	8,190	6,64		
HV 7336	335	8,158	6,134		
V 718 Sqr	336	8,49	14,124	14,170	
V 715 Sqr	337	8,164	14,124		
V 587 Sqr	338	8,211	5,66	5,98	
V 430 S _{co}	339	8,204	5,74	5,120	
Swp	340	9,59	5,74, 6,162	13,36	
HR CA	341	8,128	6,78	7,96	
V 570 Sqr	342	9,15	5,106	5,130	
DT CA	343	8,192	6,50		

v 409 Sc				
8 344	8,184	6,22	13,20	
HV 732V 345	8,133	6,92		
v 590 Sg	346 8,209	5,58, 6,148		
v 564 Sg	347 8,208	5,74, 6,162		
v 548 Sg	348 8,207	5,74	5,120	5,128
v 701 Sg	349 8,168	6,106		
v 691 Sg	350 8,153	6,106		
HV 7279	351 9,58	5,85, 7,36	13,72	
v 662 Sg	352 8,136	5,154, 7,22		
v 580 Sg	353 9,57	5,58, 6,148	13,36	
354				
v 397 Sc	355 8,178	6,36	13,20	
356				
IOGA	357 8,169	6,92	7,96	
F2 GA	358 9,24	5,162, 7,8		
v 416 Sc	360 8,185	6,22	14,100	
v 410 Sc	361 8,185	6,22	14,100	
v 720 Sg	362 8,167	14,124	14,170	
no var	363	6,120		
v 655 Sg	364 8,145	5,176	13,60	
v 647 Sg	365 8,146	5,138, 7,22	13,60	
v 568 Sg	366 9,6	5,58, 6,1625, 98		
v 566 Sg	366a 9,7	5,58, 6,162		
v 546 Sg	367 9,9	5,58	5,98	
v 687 Sg	369 8,43	6,134		
IU Sg	370 8,170	14,148	14,170	
v 678 Sg	371 8,150	6,106		
HYGA	372 8,135	6,92	7,96	
HUGA	373 8,134	6,92		
v 625 Sg	374 8,140	5,146, 7,36	13,72	

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POSITIONS

MF

B

MISCEL

no var	375		5,178					X
V 535 Sqr	376	8,201	5,106	5,130				
HV 7370	377	8,164	14,124					
V 531 Sqr	378	8,204	5,82	5,130				
Susp.	379	8,134	6,92					
HV 7239	380	8,138	5,154, 7,36					
HV 7258	382	8,131	6,78					
EFCA	384	8,190	6,64	14,100				
V 418 Sco	385	8,187	6,50	14,100				
HV 7275 ^{IX} _{CA}	386	8,129	6,78	7,96				
V 725 Sqr	387	8,146	5,146, 7,22 ⁶⁶	7,68	7,74-90	7,92, 94, 100	7 134-177	
GW CA	388	8,132	5,162					
Susp	389	9,58	5,170, 6,190					
V 438 Sco	390	8,193	6,8	14,112				
V 413 "	391	8,189	6,50	14,100				
V 716 Sqr	392	8,40, 165	14,124	14,170				
V 693 "	393	8,160	6,120					
V 672 "	394	8,154	6,120	13,48				
	396							
HV 7020	397	8,183	5,82, 6,176 ²⁰⁴					
DY CA	398	9,54	6,8					
Susp	399	8,200	6,8					
V 428 Sco	400	8,195	6,8	13,36				
V 424 "	401	8,196	6,8	13,36				
V 415 "	402	8,186	6,22					
V 714 Sqr	403	8,165	14,124	14,170	14,186			
HV 7134	404	8,211	5,66, 6,148					
	425							
var?	406	8,171	14,148					
V 544 Sqr	407	8,207	5,74	5,120	5,128			

X 408	= 1478 B 21		
✓ 543 Sgr 409	9, 10	5, 58	5, 98
✓ 423 Sco 410	8, 181	5, 74, ^{7, 190} 6, 162	7, 190
✓ 660 Sgr 411	8, 143	5, 146	13, 60
✓ 623 " 412	8, 142	5, 114, 6, 204	
✓ 602 " 413	8, 219	5, 50	5, 98
✓ 597 " 414	8, 220	5, 114, 6, 204	
✓ 588 " 415	9, 4	5, 114, 6, 204	
✓ 595 Sgr 416	9, 20	5, 114	5, 130
HV 7220 417	8, 139	5, 154, 7, 36	
✓ 599 Sgr 418	9, 17	5, 106, 6, 190	
GNCA 419	9, 21	5, 154, 7, 36	
GYCA 421	8, 132	5, 162, 7, 8	
GV " 422	9, 22	5, 162, 7, 8	7, 106
GU " 423	9, 23	5, 162, 7, 8	7, 106
FXCA 424	9, 24	5, 162, 7, 8	
no var 424a	9, 60	7, 8	
GQCA 425	9, 27	6, 64	7, 96
FHGA 426	9, 29	5, 170	7, 106
EZ " 427	9, 30	5, 170	
HV 7110 428	9, 56	5, 170, 6, 190	
Susp 428a	9, 60	6, 190	
EMGA 429	8, 198	5, 178	14, 112
Susp 430	8, 197	5, 178, 6, 8	
431	= B 277		
FNCA 432	9, 29	5, 178	7, 106
no var 433		5, 106, 6, 190	
HV 7099 434	9, 16	5, 106, 6, 190	
✓ 547 Sgr 435	9, 13	5, 82, 6, 176	
✓ 443 Sco 436	8, 203	5, 82, 6, 176	
no var 437	8, 194	6, 8	
HV 6998 438	8, 175	6, 22	

116

Position

MF

B

Miscal

HV 7139	439	9,35'	5,178, 6,20		
C	440	8,75'	23,38		
V 441 Sco	441	8,192	6,50	14,100	
C	442	8,63	23,6		
C	443	8,63	23,6		
C	444	8,62	22,74		
C	445	8,56	22,74		
C	446	9,70	22,60		
Susp	448	9,56	5,66, 6,148		
V 567 Sgr	449	9,16	5,106 6,190	6,218	
V 401 Sco	450	8,187	6,50		6,62
H.V. 7100	451	9,88	5,50, 6,162		
V 452 Sco	452	8,206	5,74 ^{7,190} 6,162	7,190	
V 382 Sco	453	8,178	6,36,	7,68	7,74-90
novae -	455	8,147	5,138, 736		
V 583 Sgr	456	9,5'	5,50, 6,204	13,36	
V 575 Sgr	457	9,19	5,106, 6,190		
V 554 Sgr	459	9,17	5,106, 6,190		
Susp	460	8,201	5,82, 6,176		
EK CrA	461	8,199	5,178	14,112	
EI CrA	462	8,198	5,178		
FS CrA	464	9,25'	5,170, 7,8		
art? C	465				
dy? C	466				
C	467	8,104	23,82		
C	468	8,79	23,22		
C	469	8,97	23,54		
C	470	8,77	23,22		
C	471	8,78	23,22		
C	472	8,78	23,22		

B^C 473	8,74	23,22	
V 653 Sg ₂ 474		5,146 7,22	13,60
HV 7193 475	8,218	5,114,6,204	
V 610 Sg ₁ 476	9,56	5,114,6,204	13,36
HV 7289 477	8,136	5,154 7,22	
V 658 Sg ₂ 478	8,136	5,154 7,22	
V 648 Sg ₂ 479	9,137	5,154 7,22	13,72
B OGA 480	9,24	5,162,7,8	
normal 481		5,106,6,190	
HV 7201 482	9,27	6,64	
FQGA 484	9,33	6,64	
C 485	8,87	23,136	
FICGA 486	9,34	6,64	
susp 487	9,34	6,64	
C 488	8,76	23,38	
C 489	8,76	23,38	
normal 490	8,126	5,178,6,8	
C 491	8,88	23,82	
C 492	8,90	23,82	
C 493	8,98	23,54	
C 494	8,96	23,54	
FHGA 496	9,36	5,178	
V387 Sco 497	9,55	6,36	
C 498			
A 499	8,17		
A 500	8,27		
A 501			
502 = 450			
A 503	8,8		
A 504			
A 505	8,6		

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	HHS Var	Position R _h Page	MF	B	Miscell
V 689 Sq ²	506	8, 43	6, 134	13, 48	
V 682 Sq ²	507	8, 44, 159	6, 134	13, 48	
V 681 Sq ²	508	8, 45, 159	6, 134		
V 598 Sq ²	509	8, 210	5, 66, 6, 148		
V 391 Sco	570	8, 177	14, 208, 7, 60		
V 688 Sq ²	511	8, 152	6, 120	13, 48	
V 668 Sq ²	512	8, 143	5, 146	13, 60	
no var	513	8, 149	5, 138, 7, 22		
V 600 Sq ²	574	9, 4	5, 114, 6, 204		
D2 CrA	576	8, 199	5, 178, 6, 8		
elong?	577				
V 447 Sco	578	8, 200	6, 8		
V 445 Sco	579	8, 193	6, 8		
V 405 Sco	530	8, 185	6, 22	14, 100	
rusp.	521				
C	522				
C	523	8, 61	22, 74		
C	524	8, 59	22, 88		
C	525	9, 74	22, 88		
C	526	8, 52, 54	22, 60		
C	527	8, 52, 54	22, 60		
C	528	9, 41	5, 196		
C	529				
C	530				
C	531	9, 39	22, 60		

Nova Scorpii No 2

17^h 47.5^m - 34° 20'

123

HA 84 192

BK 45: 219

Plates B 47985, 46997, MF 4538

corrected to
"1922"

a	1	6.05	6.01	6.0
b	2	6.48	6.46	6.5
c	3	6.67	6.66	6.7
d	4	7.24	7.25	7.2
e	5	7.55	7.58	7.6
f	6	7.99	8.06	8.1
g	7	8.38	8.48	8.5
h	8	8.59	8.70	8.7
k	9	8.86	8.99	9.0
l	10	9.9 ⁴ / ₆	9.64	9.6
m	11	9.68	9.87	9.9
n	12	10.20	10.42	10.4
o	13	10.48	10.70	10.7
p	14	10.67	10.90	10.9
q	15	11.34	11.58	11.6
r	16	11.54	11.78	11.8
s	17	11.95	12.19	12.2
t	18	12.34	12.58	12.6
u	19	12.88	13.13	13.1
v	20	13.33	13.59	13.6
x	21	14.10	14.35	14.3
y	22	14.54	14.79	14.8
z	23	15.13	15.37	15.4
α	24	15.48	15.70	15.7

124

these measures
copied from single sheets
Jan 27, 1930

M.W.F. 187

Sequence moved from Sequence for Nova No 2 Scorpio

	MF 4538 meas. from Nova No 2 Sco Seq.	MF 4638 measured in Terms of 1 st growing Image	MF 9228 meas. from Nova No 2 Sco	MF 9828 meas. by steps upward	MF 10522 meas. from Nova No 2 Sco	MF 10522 steps	Means	Residuals	Re
	1	2	3	4	5	6	7	1 2 3 4 5 6 7	
1.	6.1			8.9				6.0	1 1
2	6.7			6.5		6.8		6.7	0 2 1
3	7.3			7.2		7.1		7.2	1 0 1
4	7.5			7.5		7.8		7.6	1 1 2
5	8.3			8.5		8.6		8.5	2 0 1
6	8.7	9.5		9.5		9.2		9.2	5 3 3 0
7	9.4	9.7		10.0		9.7		9.7	3 0 3 0
8	9.4	9.6		9.7		9.7	9.7	9.6	2 0 1 1 1
9	—	—	—	—	—	—	—	—	3
10	9.7	9.9		10.1	10.0*	10.1	10.1	10.0	3 1 1 0 1 1
11	10.3	10.2		10.7	10.2	10.3	10.4	10.4	1 2 3 2 1 0
12	10.5	10.5		11.0	10.5	11.3	10.8	10.8	3 3 2 3 5 0
13	10.6 ^{me}	10.6		11.1	10.7	11.3	10.4	10.8	2 2 3 1 5 4
14	10.8	10.8	11.0	11.1	10.9	11.5	11.2	11.0	2 2 0 1 1 5 2
15	11.3	12.0	11.7	11.4	11.4	11.8	11.6	11.6	3 4 1 2 2 2 0
16	11.5	12.1	12.0	11.7	11.7	12.0	11.8	11.8	3 3 2 1 1 2 0
17	11.7	12.1	12.2	11.9	11.9	12.2	12.2	12.0	3 1 2 1 1 2 2
18	12.0	12.3	12.5	12.1	12.2	12.6	12.4	12.3	3 0 2 2 1 3 1
19	13.1	13.0	13.2	13.2	12.9	12.8	12.8	13.0	1 0 2 2 1 2 2
a	13.3	13.2		13.5	12.3	13.8	13.4	13.4	1 2 1 1 4 0
b		13.4		13.8	13.6	14.2	13.8	13.8	4 0 2 4 0
c		13.9		14.1	14.0	14.4	14.2	14.2	3 1 2 2 0
d				14.4	14.5	14.9	14.5	14.6	2 1 3 1
e				14.9	15.0	15.3	14.9	15.0	1 0 2 1
f				15.7	15.6	15.7	15.4	15.6	1 0 1 2
g				16.1	16.0	16.0	15.8	16.0	1 0 0 2
h				16.5	16.4	16.4	16.3	16.4	1 0 0 1

* measures underlined were taken as starting points for
intervals & steps

Seq. also marked on
A 14868
SB 1880

125

COLOR FROM
RED PLATE MF18786

129 / 0.1589
205
129

0.16±

760
645
1150
1032
1180
1161

HD sp. pg.

}	2 REDDER	165185	G5	6.7
	TINNY			
	1	164870	K0	7.0
	AVERAGE	164320	B8	7.5
	BLUE	164321	B8	7.5
	AVERAGE	16442	B9	8.0
	"	164475	B9	8.7
	"	164338	A2	8.9
	REDISH	164202	A0	8.9

AVERAGE

"

RED

BLUE TO YELLOW *red*

" TO "

RED

BLUE

BLUE

RED

VERY BLUE

RED

YELLOW

SEEN

n.s.

n.s.

-

-

-

126

Aug 20, 1929

B 297 Nova in Scorpio

HV 4716

used sequence of Nova Sco. No. 2

HARV p192

plates B 47985, 46997, MF 4538

Bh 45: 219

9 prints.

(corrected for 1922)

nova

Year	B plates exp = > 20 ^m				
1889	B 3728	ms < 16	1908	A 9057	ms < 17.5 ^m
90	5407	ms < 15.4			
93	9556	ms < 16			
96	16448	" < 15	Nova not seen on MF plates		
99	23684	" < 16.0	in 1924, 25 or 1926		
1900	25506	" < 15	observations on 1928 MF plate		
"	25516	" < 15.5			
02	30511	" < 16			
03	31862	" < 14.5	May 16 '28	MF 11862	ms < 16.5 JD ²⁴ 25383
"	32049	" "	" 19 "	11705	ms " 386
04	33759	" < 15	" 21 "	11718	" < 16.0 388
07	37968	" < 14.5	" 23 "	11743	" " 390
09	40358	" < 14	June 16 "	11844	" < 15.7 25414
14	44783	" < 14.5	" 20 "	11893	9.5 418
"	44840	" < 15.0	" 21 "	11899	9.4 419
"	44861	" < 14	" 23 "	11919	10.4 421
"	44876	" < 14.5	July 9 "	11913	11.1 437
"	45001	" "	Sept 3 "	12285	14.6 493
"	45005	off	" 8 "	12304	15.0 498
"	45022	ms < 13.5			

Position 1900

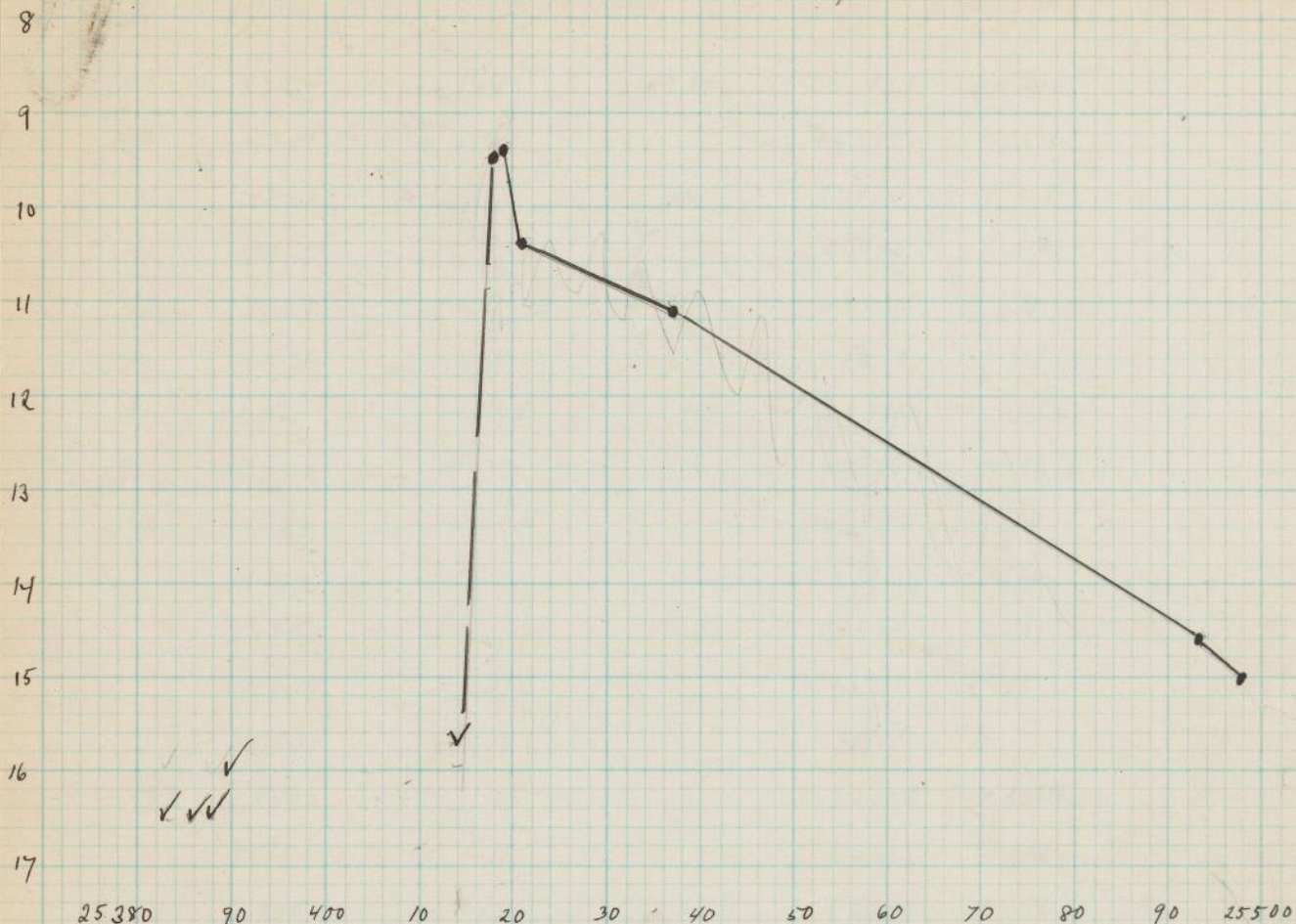
17^h 37^m 34^s - 35° 40.9'

B 297

Nova Scorpis No?

(1900) 17 37 34 - 35 40.9

N V 4716



Another Nova in Scorpio, HV 4716: HV 4716 was found when comparing plates on MWF 187, $17^{\text{h}} 52^{\text{m}} - 36^{\circ}$ for variables. Its range is from less than 16.5^{m} to 9.4^{m} magnitudes. Its position for ~~1900~~ ¹⁹⁰⁰ is $17^{\text{h}} 37^{\text{m}} 34^{\text{s}} - 35^{\circ} 40.9'$. In order to verify whether it is ~~really~~ ^{a nova} a ~~very~~ ^{the} early plates if it was less than 15.7^{m} on June 16 ¹⁹²⁸ and four days later ^{on June 20} it had reached 9.5^{m} . It then dwindle off to the fifteenth magnitude ^{in September} on the last plate now ^{available} ~~taken~~ on the region. The ~~the~~ ^{early} plates in the B, A + M F series on the region were examined. Not a trace of the nova was seen from 1889 till it appeared in 1928. The table gives the observations for the nova in 1928 ^{on} from the M F plates.

May 16, 1928

May	16	16.5
"	17	16.5
"	21	16.0
June	23	16.0
June	26	15.7
"	30	9.5
"	24	9.4
July	28	10.4
July	30	11.1
July	31	11.1
Oct 1	1	11.1

" 43426 " "

On June 16, 1928 it was ^{not seen} invisible on a plate
~~whose~~ ^{at} limiting ^{mag} was 15.7

On June 16 1929 it was not seen & fainter
 than 15.7 the limiting magnitude of the plate

On a plate of limiting magnitude 15.7 taken June 16
 1928 the ~~nova~~ ^{star} was not seen

B plates exposure $\leq 20^m$

1889	B 3784	ms $\leq 14^m$	1900	B 25424	ms $\leq 13^m$
90	5151	" ≤ 12.5	"	25918	" ≤ 11
"	5833	" ≤ 13.5	01	27108	" ≤ 12
"	5835	" "	"	27406	" ≤ 12
92	7877	" ≤ 11	"	28255	" ≤ 13
93	9406	" ≤ 14	"	29254	" ≤ 14
94	11421	" ≤ 13.5	02	29570	" ≤ 12.5
95	13993	" "	"	29818	" ≤ 12.5
96	15824	" ≤ 12.5	"	29853	" ≤ 14
"	17120	" ≤ 13	"	30359	" ≤ 13
"	17327	" "	03	31470	" ≤ 12
"	17444	" ≤ 13.5	"	31726	" "
"	17534	" ≤ 14	"	31919	" "
97	18492	" "	"	32650	" ≤ 13.5
"	18724	" ≤ 12.5	"	32695	" ≤ 12
"	19082	" ≤ 13.5	04	33299	" ≤ 14
"	19113	" "	"	33486	" ≤ 12
"	19217	" ≤ 14	"	33807	" "
"	19719	" ≤ 13	"	33866	" ≤ 14
"	20285	" ≤ 14	05	35781	" ≤ 12
"	20465	" ≤ 12.5	"	36792	" "
"	20489	" ≤ 13	"	36868	" ≤ 13
"	20502	" ≤ 12	"	36911	" ≤ 12
98	21991	" ≤ 14	07	37538	" ≤ 13
"	22022	" ≤ 12	08	39090	" "
99	22476	" ≤ 13	09	40063	" "
"	22518	" ≤ 13.5	"	40133	" ≤ 12
"	23200	" "	10	41484	" ≤ 12.5
"	23496	" ≤ 12	11	42234	" ≤ 13
"	23968	" "	12	43354	" "
			"	43426	" "

(over)

Nova

B 297 (continued)

B plates exp $< 20^m$

1913	B 43692	ms 413 ^m
"	43712	" < 11
"	43766	" < 10
"	44101	" < 11
14	44311	" < 13
"	45021	" < 13
"	45046	" < 14
"	45047	" < 13
16	47606	" < 10
"	47633	" < 11
"	48010	" < 13.5
17	50948	" < 8
"	50994	" < 12
"	50999	" < 10
"	51140	" "
"	51468	" < 11

- 35° 7176	17 35 55.4	- 35° 37.8 (1915)	- 0.4	2.3
- 35° 7179	- 36 - 0.4	- 35 - 40.6	1.4	0.6
	5 ^s .0	2.8	1.1	2.9

17	35	53.4	- 35	40.0	- 2
	35	53.4	- 35	40.0	7

precession for 1900

B 297

+	1	40.5	-	0.9
17 ^h	37 ^m	34 ^s	-	35° 40'.9

130

MWF 187

17^h 52^m - 36.4

Limits: -

17^h 25^m - 18^h 18^m

-31.8 - 41.2

CHP has

MF 4538
6347
6648No. of
Suns
New Var

1	MF 8537	May 5, '24	3	23911.857			
2	8673 -	June 28 "	3	965.687	55	Contact of MF 10522 Nos A 80-85, B 233-240, C 133-153	Aug 1929
3	8724 -	July 25 "	3	992.633	19	Contact of MF 8585 Nos A 132 B 377-386	Oct 1929
4	8785	Aug 28 "	3i	24026.589		Contact of MF 10522	Aug 1929
5	8842 -	Sept 27 "	4	056.503	45	Nos A 86-89 B 261-289	C 154-165
6	9816 -	Sept 17 '25	3	24411.482	15	Contact of MF 8785 Nos A 127 B 392-402	Oct 1929
7	9828	" 18 "	3+	24412.473		Contact of MF 10522	July 15th 1929
8	9838 -	" 19 "	4	24413.477	57	Nos A 71-77 B 199-232	C 119-132
9	10141	Apr 20 '26	3i	24626.856		Contact of MF 10522	July 14th 1929
10	10146 -	" 21 "	3i	627.868	54	Nos A 52-57 B 120-153	C 88-104
11	10240 -	May 13 "	3i	649.757	20	Contact of MF 9838 Nos A 110-112 B 336-345	Sept 29, 1929
12	10249 -	" 14 "	3i	650.761	10	Contact of MF 8785 Nos A 138-142 B 403-406	Oct 1929
13	10271	" 18 "	3i	654.812		Contact of 10522	April 1929
14	10279 -	" 19 "	3+	655.852	175	Nos A 1-36 B 1-70	C 1-39
15	10284	" 20 "	3	656.852		Contact of 10522	July 1929
16	10365 -	June 14 "	3i	681.748	73	Nos A 58-70 B 154-198	C 105-118
17	10522	July 14 "	5	711.687		Contact of 8785	October 1929
18	10534 -	" 15 "		712.662	37	Nos A 121-131, B 362-376, C 206-216	
19	10572	" 30 "	3i	727.630			
20	10574	" 31 "	3	728.500			
21	10575	" 31 "	3i	728.531		smashed	
22	10576	" 31 "	3i	728.565		Contact of MF 10522	June 1929
23	10577 -	" 31 "	3i	.596	72	Nos A 87-51 B 71-119	C 70-87
24	10578 -	" 31 "	3i	.630	26	Contact of MF 9838 Nos A 99-109, B 326-335, C 184-188	Aug 1929
25	10579	" 31 "		.662			

A 13996

755.588

MF 11533	April 18 '28	4i	25 355.613	contact of 10522	Nov 5 1929
MF 11662	May 16 '28	3i	25 383.596	Nos 495-498	
26 11705	" 19 "	3i	386.630	contact of 9838	Aug 1929
27 11718	" 21 "	3i-	388.622	Nos A 96-98, B 311-325, C 120-182	
28 11745	" 23 "	3	390.494	contact of 415835	Oct 1929
39 11844	June 16 "	3i-	414.495	Nos A 133-136 B 327-391 C 225-230	
50 11883	" 20 "	3	418.427		
31 11899	" 21 "	3i	419.492		
32 11919	" 23 "	3+	421.461	contact of 10522	Aug 1929
33 11973	July 9 "	3+	437.444	Nos A 70 thro 75 B 290-310 C 166-179	
34 12285	Sept 3 "	3 - - -	493.268	contact of 8785	Sept 1929
35 13120	May 13 '29		745.609	Nos A 113-120, B 346-361, C 196-205	
36 13134	" 17 "		749.587		
37 13287	July 1 "		794.409	contact of 10522	Jan 1930
38 13327	" 6 "		799.464	Nos 499 thro 531	
39 13398	Aug 8 "		832.340		
40 13463	" 27 "		851.285		
41 13481	" 30 "		854.286		
42 13495	" 31 "	3y dark	855.289		
43 13500	Sept 6 "		861.252		
44 13502	" 7 "		862.255		

G = MAG var 10

Start of	198 No	Bright	Faint	
MF 10522	✓ A 1	M 10279 10284	FA 10522 10534	
MF 10279	✓ 2	10279	" "	
G 75	✓ 3	10522 10534	10279 10284	
	✓ 4	" "	" ms "	
	✓ 5	10279 10284	10522 10534	
	✓ 6	" "	" "	
	✓ 7	10522 10534	10279	eclipsing?
def	8	" "	" 10284	
MAG 78	✓ 9	10279 10284	10522 10534	
G 71	✓ 10	" "	" "	preading of 2
	✓ 11	" "	" "	
	✓ 12	" "	" "	
	✓ 13	" "	10522	
	✓ 14	" "	10522 10534	2
G 73	✓ A 15	" 10284	" "	
	✓ 16	10279 10534	10522 10279	slight
	✓ 17	10279 10284	" "	
	✓ 18	10522 10534	ms 10279 10284	
ape?	G 82 ✓ 19	" "	" "	
	20	10279	10522 10534	
	21	10522 10534	10279 10284	only small variation
	✓ 22	10279 10284	10522 ms 10534	
	✓ 23	10522 10534	10279 ms 10284	
	✓ 24	10279 10284	10522 10534	
G 88	✓ 25	" "	" "	
G 86	✓ 26	10522 10534	10279 10284	
	✓ 26a	10279 10284	10522 10534	
G 95	✓ 27	10279	" "	
G 47	✓ A 28	10279 10284	10522	

Bright

Faint

11973, 11743

8785

10249

A2661, 9838, 8785

10240, 11973, 8724

10578, 11973

MSA2661, 10365, 9838, 8785

10249

8785

10249

8785

7 Br 10284 ~~maybe due to resolution~~ 11743

defect of 10279

9838, 8785

10578, 11973

9838

med 10249

10249

13 Br 10534, 10577, 8785

10249

14 10240

Ft 10284, 8673, 9838

8673

16

10284

8785

11743

10365, 8785

10578

10365, 9838, 8673, 8785

20 ~~med~~ 10284 Br 10271

11973

10146, 11705, 10240, 11943 9838, 8785

10249

10249

10146, 9816

8785

8785

10578

10146, 10265, 9838, 8742

11973, 11940

8785

10365, 9828

10578

28 med 10534 9838

10578

136 cont

contact of		Bright		Faint		
MF 10522	G 83 ✓ A	29	10522	10279	10284	1028
MF 10279	? ✓	30	10522	10534	10279	10284?
	? ✓	31	10279	10284	10522	10534
	✓	32	10279	10284	10522	10534
	def ✓	33	10522		10279	10284
	? ✓	34	10279	10284?	10522	10534
	✓	35	10279	"	10522	"
	✓ A	36	10522	10534	10279	10284
711 Sq	G 111 ✓ B	1	10522	10534	ms 10279	ms 10284
696 "	✓	2	10279	10284	10522	10534
664 "	✓	3	10279	10534	10522	10284
656 "	✓	4	10279		10522	10534
651 "	✓	5	10279	10534	10522	10284
HV 7233		6	10522	10534	10279	
3 persons		6a	10279		ms 10522	ms 10534
image on MF 10279		7	10279	10284	ms 10522	ms 10534
643 Sq	G 94 ✓	7	10279	10284	ms 10522	ms 10534
633 "	✓	8	"	"	ft "	"
620 "	G 106 ✓	9	"	"	ms "	ms "
596 "	✓ B	10	"	"	ft "	left "
571 "	✓	11	"	"	ms "	ms "
420 Sco	✓	12	"	"	ms "	ms "
		13	10522	10534	10279	
697 Sq	G 112 ✓	14	"	"		10284
661 "	G 108 ✓	15	10279	10284	10522	10534
594 "	✓ B	16	"	"	"	"

Bright

Faint

29 10538

10534, 10365, 9838, 8673

10365
10146 look up 1024131 10365
still doubtful

10249

defect of 10522

34 doubtful

10249

8842

F 10534; 10547

8842

10146, 9838, 11919, 13287

Low 8785

10249
10365, 11343, 9816

146.5

Cluster 8842

10241, 10249

0.48304

Cluster

0.567805

Cluster 4 10249

10284

0.508985

Cluster 10249

0.56222

SHORT 6 med 10284

B

10240

21310284

a spurious image

Low 10365, 8842, 11919, 9838

10578, 8785

197.5

Low 10249

8785

229

Low 8842, 10240, 11919, 10249

9838, 8785

198.2

Low 10 B A 13996, 10146, 10517

150.5

Low 10249

9838

284^d

Low 10249

look him up on 10365

213^d

13 B 10284

Cluster

10577, 10365, 8785

0.49225

Low 10146, 9838, 9816, 10249

10578, 8785

230

Low 10146, 8673, 10249

9838

168.6

v = very

Bright			Faint			
MF 10522 G99 ✓ B 17	MF 10522	10534	10279	10284		
563 " "						
MF 10279 ✓ 18	10279	10284	10522	10534		
557 " ✓ 19	"	"	"	"		
542 " G92 ✓ 20	10522	10534	10279	10284		
541 " G102 ✓ 21	"	"	"	"		
539 " ✓ 22	"	"	"	"		
448 Sco ✓ 23	"	"	"	"		
710 Sq2 ✓ 24	"	"	"	"		
649 " ✓ 25	"	"	"	10284		
no variation a	"	"	"	"		
due to def of contact b	"	"	"	"		
635 Sq2 G107 ✓ 26	"	"	"	10284		
637 " G118 ✓ 27	"	"	"	"		
632 " G134 ✓ B 28	"	"	"	ns		
618 " ✓ a	10279	10284	10522	10534		
612 " G97 ✓ 29	10522	10534	ns 10279	ns 10284		
no variation	30	10279	10522	10534		
553 Sq2 G132 ✓ 31	10522	10534	10279	10284		
G132 missing good	32	"	"	"		
very doubtful	33	"	"	"		
defect	34					
✓ 35	"	10534	10279	10284		
? 36	"	"	"	"		
403 Sco 37	10279	10284	10522			
396 " G131 ✓ 38	10522	10534	ns 10279	10284		
398 " ✓ 39	"	"	"	"		
H10A ✓ 40	10279	10284	10522	10534		
636 Sq2 G133 ✓ 41	10522		10279	10284		
628 " ✓ B 42	10279	10284	10522	10534		

	Bright	Faint	
LONG	9816	11919, 8785 10577, 10146, 8673, 8842	262 ^d
IRREG	10249		
Cepheid	9838, 8842, 11919, 8785	10578, 10240	16.255
SEMI REG	9838, 8785, 11743	11919, 8785 10146, 10365, 10240, 8673	323 [±]
SEMI REG	A 13996	10365, 8842	145 [±]
LONG		9838, 8673	220.5 ^d
IRREG			
Eclipsing	Br 10284	MF 13287	2.3817 ^d
LONG	A 5622	A 5555, A 2659	141:
		10365, 8673, 8842 8842, 11919, 10249 10146, 10365, 9838, 8673	241
LONG	8673, 8729	9838, 8785	241.5
LONG 28	Br A 13996	Br 10577, 8673	257
R Cr B	11973, 11743, 9812, 10249	A 2310, 8673, 8842, 8785	-
LONG	Br A 2310, 9838, 9816	11919, 8785 10146, 10365, 8673, 11919	108.7
LONG		10146, 8842, 11919	258.8
		10534	
	8842	10271	
Eclipsing	10577 Br 10534	maybe due to defor 10522	1.04087
LONG		10146, 9838, 11919	219.3
IRREG	8842	90271	
Cluster	10365	ms A 2310	0.47071 ^L
Cluster	A 5622	10534 & A 2310, 8842, 11919	0.5354
LONG	10146, 11919, 11705, 12943	9838, 8785	260

140 (cont.)

Interaction of		HVS No.	Bright		Faint		
HV 7162							
MF 10522	✓	B 43	10522	10534	10529		
FVA							
MF 10279	✓	44	"	"	ms " ms 10284		
FTCA	✓	45	10279	10284	10522 10534		
ER "	✓	46	"	"	"		
EO " v	✓	47	"	"	"		
FF "	✓	48	10279	"	10522 10534		
FG "		49	10522 and 10534	10279	10284		
ES " v	✓	50	"	"	ms " ms "		
439 Sco G 130	✓	51	"	"	ms " "		
no variation		52	no variation				
HV 7014		53	10279	10284	10522 10534		sl. var
no variation		54	10522	10534	10279		
404 Sco	✓	55	10279	10284	10522 10534		
ITCA		B 56	"	"	"		
IL "	✓	57	"	"	" 10534		
IP "	✓	58	10522	10534	10279 10284		
IN "	✓	59	10279	10284	10522 10534		slight
HT "	✓	60	10279	10534	10522 10284		slight
HL "	✓	61	10522	10534	10279 ms 10284		
GR "	✓	62	10279	10284	10522 10534		CP
GG "	✓	63	"	"	"		
FR "	✓	64	"	"	"		BRCA full of comp close down
FO "	✓	65	10522	10534	10279 10284		
EL "	✓	66	"	"	"		
EG "	✓	67	10279 and 10284	10522	10534		
DW "	✓	68	"	"	"		
EE "	✓	69	"	"	"		
435 Sco	✓	B 70	"	"	"		

(comparing 8785, 10249, 873, 10249, 873, 10249)		
SHORT Cluster	8785, A5555	FA 7 10284, 11743
LONG	med A 13996, A2659	med A 2310, A5555
LONG	10146, 10365, 9838, 9816	11705, 10578, 8785
LONG	10365, 9838, 9816	8785
LONG	11743 or 11719	8785
LONG	med 10284, 10146, 10365, 11773	8785, A2659
Cluster	11365	9838, 8673
LONG	11773	10146, 8673, 8785
LONG	11705, 8785, A13996	10146, 10365, 8673, 9838
LONG	10271	8642, 10249
	or 10284, 9842, 10249, 10365	
LONG	10146, 9838, 9816	8785
ECLIP	or 10534, 10249, 1055	
LONG	10146, 11705, 10240, 11743	9838, 8785
CLUST	9838, 11773	10577, 10365, 8673, 8785
Cluster	10577, 11773	
Cluster	10249	8785
LONG		8642
LONG	10146, 10365, 9838, 8673	11705, 10578
LONG	or A 13996, 10577, 10146	9838, 8785
LONG	8673, A2659	A5555
SEMI REG	9838, 8724, 11743, 9816	10578, 10240, 8785
LONG	med A 13996, A2659	10146, 10365, 9838, 8785
LONG	or A 13996, 10577, 10146	A5555
LONG	10146, 10265, 10240, 10249	med A 13996, 9838, 8785
SEMI REG	10146, 10365, 11773,	A13996, 10577, 8785
LONG	10249	or FA 13996, 8785

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(cont)

66
36
40
152

		Bright		Faint			
MF 10522	✓ C	1	MF 10279 10284	10522	10534		
MF 10279		2	10279	ms 10522	10284		
	✓	3	10279 10284	ms 10522	10534		
	✓	4	10522 10534	10279	10284		
	✓	5	" "	" "	" "		
	✓	6	10279 10284	ms 10522	10534		
	✓	7	10279 10534	10522	10284		short
	✓	8	" 10284	" "	10534		
	✓	9	10522 10534	10279	10284		large orange
	✓ C	10	10522	" "	" "		
	✓	11	10522	10279	10284		
	✓	12	10279 10284	10522	10534		
	✓	13	10522 10534	10279	10284		
	✓	14	10279 10534	10522	10284		short
	✓	15	10522 10534	10279	10284		
	✓	16	10279 10284	10522	10534		
	✓	17	10279	10522	10534		
	✓	18	10522 10534	10279	10284		
	✓	19	" "	" "	" "		
	✓ C	20	10279 10284	10522	10534		
	✓	21	10522 10534	10279	10284		
	✓	22	" "	" "	" "		
	✓	23	10279 10284	10522	10534		
	✓	24	" "	" "	" "		
no var?		25	10522 10534	10279	10284		
	✓	26	10279 10534	10522	?		
?	✓	27	10279 10284	10522	?		
	✓	28	10279 10284	10522			
	✓ C	29	" "	ms " ms 10534			

Bright

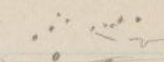
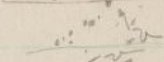

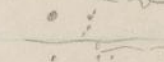

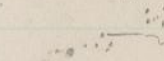
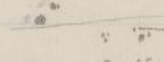
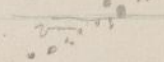
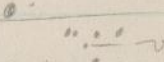
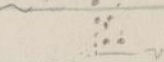
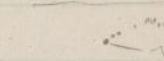
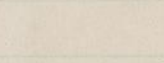
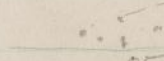
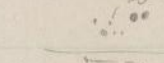
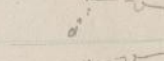

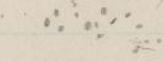

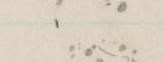
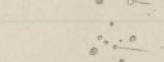

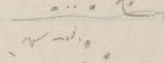
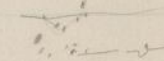
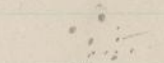
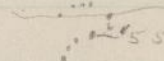
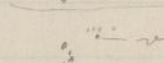
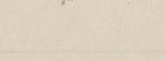
Faint

10577, 10365
 med on 10522 + 10534
 look up when plates
 B1 10365, 8842, 11919, 11705, 10240
 A5555
 B1 A2310, 11973, 8724
 6 B1 A9061, 10146, 11919, 11705
 10365, 9816
 8785, A10776
 10578, 11973, 9816
 B1 A9061, 8785, A5555 9838
 8842
 10146, 11919, 9838, 11973, 10146
 10249
 B1 A9061, 8785, A5622
 9838, A5622
 17 8785
 11973
 A2659
 9838
 10578, A3996, A5622
 10271
 10249
 26 B1 A9396
 med 10534, 8785
 10146, 8842

10271, 8142
 faint 10249
 MS A 2310, 9838, 8785
 MS A 2310, 8785, A2659
 8785, A5555
 MS A 2310, 9838, 8785
 8785
 9816, A5555
 11719
 MS 10146, 10365, 9838, 8785
 10240
 10365, 9838, 8673, 11919
 10534, A9061
 A9061, 10578, 8785
 10365, 8673
 MS A9061, 8842
 11973, A5555
 MS A9061, A5555
 10284, 8824
 9838, 8673, 8785
 A9061, 10146, 10365
 A5555
 10578
 10146, 9838, 11919, 8785
 11919, 8785
 10146, 9838, 8673, 8842
 8842
 8842
 10577
 10271
 8842
 8724
 1

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(cont.)

contact of		Bright		Faint		
MF 10522	✓ C 30	MF 10279	10284	MF 10522	ms 10534	
MF 10279	✓ 31	"	"	"	"	
	✓ 32	10279		mid 10522	10534	
	✓ 33	10279	10284	10522		
	✓ 34	"	"	"	10534	
	✓ 35	10522	10534	10279	ms 10284	
	✓ 36	10279	10284	10522	10534	
	✓ 37	10279		10522	10284	
	✓ 38	10522	10534	10279	10284	
	✓ 39	"	"	"	"	
	C 40	10279		mid 10522	10534	
	✓ 41	"	10284	"	"	
no variation	42					
	✓ 43	10279	10284	10522	10534	
	✓ 44	10279		10522	10534	
	✓ 45	"	10284	"	"	
	✓ 46	10522	10534	ms 10279	ms 10284	
	✓ 47	10279	10284	10522	10534	
	✓ 47a	10522	10534	10279	10284	
	✓ 48	10279	10284	10522	10534	
	✓ 49	10522	10534	10279	10284	
	✓ C 50	10279	10284	10522	10534	
	✓ 51	10522	10534	10279	10284	
	✓ 52	"	"	"	"	
	✓ 53	10279		10522	10534	
	✓ 54	"	10284	"	"	
end - 10279 A5C Known	55	10522	10534	10279	10284	
G 65	✓ C 56	"	"	"	"	

3
200 pi

47a

slightly

all very ft stars

Bright

Faint

8842

10249, 8842

10249

Br 10538, 8724, 11743

10365, 10240, 11973

Br A9061, 11705, 10578

10146, 9838, 8724

Br 10365

mid 10534 Br A9061

9838

11705, 10240, 8784

40

10240, 8785

10146, 8842, 11919, 11705

10146, 9838, 8672

8673

Br A9061, 10146, 9838

Br A9061, A5622

Br A9061, 10146, 8842

mid 8842 10249

9838, 9816, 10249

11705, 11743

10249

10578, 11973, 8724

10577

9838, 11743, 9816

10284, 8785

A9061, 8785

ms A2310, 9838, 8785

8672, 9838, 8785, A2639

A9061, 11705, 10578

10240

11919

10146, 9838, 8672, 8842

10284, 10249

9838, 11973, 8724

ms A9061, 10578

10284, A9061

10578

A5635

10249

8785

10146, 9838, 8785

8672, 11919, 9838, 8785

10284

10365, 8672, 8842

10578, 8785

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(cont)

H.S.N.		Bright		Faint		
MF 10522	✓ C 57	MF 10522	10534	MF 10279	10284	
MF 10279	G-31 ✓ 58	" "	" "	" "	" "	
	✓ 59	10279	10284	10522	10534	
	✓ 60	10279		10522	10534	
H.V. 6656	✓ 61	10279	10284	10522	10534	
10505	- ✓ 62	10279	10284	10522	"	
6645	✓ 63	10279	FA 10284	JS 10522	HS 10534	
	? 64	"	"	"	"	
10485	✓ 65	"	"	"	"	
10481	✓ 66	"	10279	10522	10534	
	✓ 67	10279	10284	10522	10534	
	✓ 68	"	"	"	"	
	? ✓ 69	"	"	"	"	

66 CDB
 67 = 56 CDB
 22 CDB

Bright

Faint

11705, 10578, 8785

9838, 8673, 11919, 8785

10146, 9838, 8673, 11743

Short

10577

10284

10365, 8672

8785, 11662

9816

10146, 10249

defon 10524, 10249

8842

9838, 9816

10284

10578, 8785

8842

10271

8842

Known variables

Copied on
succeeding
pages
See page 152

	Name	Bright	Faint
	Lupinus Vars. / meas. by HHS		
4258 w	531. 1933	10279	10522
429 "	532. 1933	10279	10279
552 Sqr	305. 1933	10522	10279
559 "	554. 1933	10522	10279
569 "	307. "	"D"	10279
589 "	583 "	10522	10279
593 "	584 "	"AP"	10279
622 "	595 "	10522	10279
704 "	642 "	10522	10279
713 "	649 "	10279	10522
12	85 "	10279	10522
13	86 "	10279	10522
14	87 "	10279	10522
15	88 "	10279	10522
16	89 "	10279	10522
17	90 "	10279	10522
18	91 "	10279	10522
19	92 "	10279	10522

1	CIBNo		
2	390e	10522	10279
3	389e	10279	10522
4	56e	10522	10279
5	99e	10279	10522
6	94e	10522	10279
7	3w	10279	10522
8	39c	10279	10522

4w is probably AC or A

Bright

Faint

LONG		d
		109.3
LONG		216.7
LONG		276.5
LONG		352
LONG		206
IRREG	Br 10577	
LONG	Br 10577	225
LONG	Br 10577	265.5
LONG	Br 10577	194.0
LONG	Br 10577	253.4

Br 10577

Br 10577

150

Identification of CDB variables
previously found & in corner overlapped by her.

410F184

CDB No.

	1	- W4	8842	10522		
	2	39C	10279	10522		
	3	- 58C	10522	10577		
	4	W3	10279	10522		
AC CrA	5	- W34				probably AC CrA
	6	- 140C	10522	9838		
	7	- 290C	10522	10279		
	8	- 389C	10279	10522		LP
G I Sco	9	- W14	8842			
	10	- 56C	10522	10279		this is not CDB star which = C67
HV 10511	11	284C	9838	10522		clust 0.416
6657	12	76C	9838	10522		
HV 6654	13	285C	10146	10522		285C
Could 388C be MAG 187	14	- 388C	10522	9838		it is
HV 661?	15	22C				
	16	144C	11919	10522		144
	17	94C	10522	10279		
HV 11687	18	- 385C	11919	10522		
HV 11683	19	99C	10279	10522		
6641	20	189C	10522	9838		173.8
H.V. 6639	21	313C				223.5
6629	22	250C				235.8
HV 6621	23	234C				
6606	24	314C				169.2
	25	382C	8673	10522		irrey 1/2 8785
6603	26	383C	10522	13287		61 9838 Ft 11717
HV 10484	27	69C	11919	10522		11919
	28	98C	10522	9838		irrey?
HV 10477	29	29C				
	30	235C				Short?

continued on bottom p. 151

8785
10577, 11919, 8785
8785
10146, 9838

11973, 10534, 11743
10534
9838, 11973

8673, 11705, 10578
11973, 10534
10146, 9838, 9816
87

8785
10146, 10365, 9838, 11919
10578, 8785

11919
8842, 9816

10578, 70240, 8785

21919

11973, 9816
8785, A5622
11973, 11743
10577, 8673, 11919, 11973
11705, 9816

8785
11973, A5635
8785
8785
8785

CDBN

31 215

cluster?

AV 6581 26K = 7445 188

HV 10474 183

11.4 6571 216

11973 8785

clust. 0.509
11.4^d



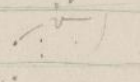
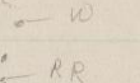
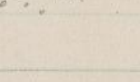
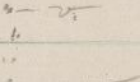
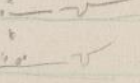
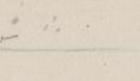

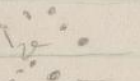
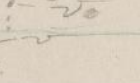
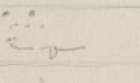
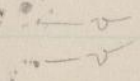
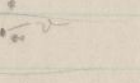
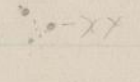
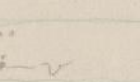
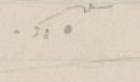

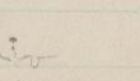
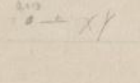
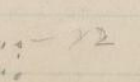


W2

HV 4431

Identification of Known Published Variables
in MW F 187

			Bright	Faint		
	A	1	BM Sco	11919	10522	in of dust
272		2	- Sco	10522	11919	
264	H.A. 90,183	3	FX Sco	8842	10522	MAG 15
		4	FY "	11973	8785	very faint " 48
3	Smirag	5	SX "	10522	8842	MAG 45
		6	FZ "	9838	10522	" 49
253.2	uc. 42	7	SV "	10522	10279	MAG 50
		8	Nova ³ "			
		9	GG "	10522	10146	MAG 53
		10	CG "	10522	10146	16 W
20.32	NC 913	11	RY "	10146	10522	
23.15	HC 839	12	SY "	10522	10279	MAG 46
20.32	HC 839	13	BN "	10522	10365	marked MF 9238 MAG 6
367	HC 225	14	Nova ² "			
NC 137		15	CR "	8842	10522	MAG 42
	A	16	BS "	at top of plate		
edge no variation N 6247		17	TX "			
		18	GI "	10522	10279	MAG 56
	A	19	AI "	10522	10279	MAG 20
		20	V 440 Sco			prob NAR R 217
	C	21	AC Cr A	10522	10577	MAG 62
Ecl. 1.69	B2 19 274.3	22	RW "			
Nova	H 6847	23	FL Sgr	8842 8785	10522	Nova MAG 33
		24	KX "	10249	8785	MAG 5
196		25	FT "	10146	10522	" 35
	C	26	AD Cr A	10522	10279	8785 149816 " 55
230.6		27	FU Sgr	10522	10279	MAG 34
	V	28	AE Cr A	8785 8785	10522	" 58
		29	AF "	10279	10522	MAG 3
	C	30	VY "	19838	10522	" 22

	9838	11705	
	11705, 8785	9838, 11973, 10534	
Long	10249		266.
	11973, 8724	8785, 87	
Long	8842, 8785	10365, 10244, 11973	390.5
SV	10578, 8785	1119 11973	
		10146, 9838, 8842	
Long	10365, 11705, 8785	9838, 11973, 8724	220
	8785	9838, 8673, 8724	
	8842, 8724	8785	
	8842, 8785	10146, 10365, 9838, 10534	
Long	11705, 11973, 8785	9838, 11973, 8785, 10534	616. ^d
	11705, 8785	9838, 11973, 10534	
GI	11705, 8785	10577, 10146, 9838, 10240	
	10578, 8785	1119	
		10146, 9838, 8842	
	8785	10146, 9838, 11973	
VB	10146, 8842, 8785	11973	
Irr.	82659	45535	
Long	10365, 11973, 9838, 11973	10578, 8785	251.3
	10578, 8785	8842	
Long	10578, 8785	10146, 10365, 9838	
Long	8785	8724 11973	230.6
Long	8785	10146, 10365, 9838	448
Long	10146, 10240	11973, 10534	467
	8672, 8785, VB 8724	9838	
		10578, 11973, 10534	

		Bright	Faint		
✓	31	AG CrA	11885 10522 8673		MAG 53
26.5	32	FV Sqr	8842 10522		MAG 44
255.5	33	KZ "	8842 10522		" 60
	C 34	VZ CrA	9838 10522		MAG 13
	C 35	W "	10279 10522		
281.5 HC158	36	RR "	10279 10522		MAG 52
Nova H0733	37	Nova 7 Sqr	44946 AM 10038 8842		Bright Aug 1914
	C 38	AH CrA	8785 10522		MAG 54
✓	39	WX "	10522 8673		long MA 4W
APR No 55	C 40	- "	11522 10279 10522		
	C 41	AI "	8842 8785 10522		MAG 21
	42	Nova 6 Sqr	AM 3802		Bright July 26 1905
	A 43	FW "	10279 10522		9W
	44	FX "	10522 10279		partially wrong MAG 29
	A 45	FY "	10279 10522		MAG 2
HHL No A48	46	FZ "	119838 10522		MAG 1
	47	AK CrA	9838 10522		" 14
	48	GG Sqr	10522 MS 10279		" 27
	C 49	WZ CrA	8673 10522		long 17W
✓	50	AL "	10365 10522		MAG 63
✓	51	XX "	10279 10522		7W
	52	GH Sqr			11W
	53	GI "	10522 10279		Long MAG 18
	A 54	GK "	9838 8785 10522		10W
Ed.	C 55	RS "			
2.42 PA. 20 656	56	LL "	11919 10522		MAG 64
	57	LM "	10522 10279		MAG 59
	58	XY CrA	10279 10522		2W
Ed.	A 59	GL Sqr			12W
	A 60	XZ CrA	10279 10522		15W

Long	A3622 ^{on only on this} plate	A5632	575
Long	8385, 11919, 11705, 8785	9838, 10534, 8724	269.5
Long	8785	11973, 10534, 8724	255.5
	8842, 8785, 9816	11705, 10578, 10240, 11973	
	9838, 8673, 8842, 11919, 11973	11705, 10578, 8785	
	10146, 8842, 11919, 11973	8785, 10534	
	8785	11973, 10534, 8724	
K Cr B	11973, 10534, 11743	8842, 8785	
	10534	8785, 11743	
	8785	11973, 10534, 8724	
FW	10577, 11917	9816	
Long	10577, 9838, 8785	10146, 10365, 8673, 11705	178.
	10146, 10365, 10240, 8785	9838, 11973, 10534	
	9816	10240, 8785	
Long	8842, 8785	10578, 10240, 10534	410. ^d
Long	9838, 10534, 8785	8842, 11919, 10240	
A Cr B	8842, 11919, 11705, 8785	10577, 10146, 10365, 8673	280.
Cepheid	8673, 9838, 11973	9838, 11973, 10534	
cluster	10577, 8673, 71919, 10240	10578, 8785	17.07
Long		9838, 8785	0.555/6
Long	10365, 9838, 11973, 10534	10577, 8842, 11705, 8785	336
	8785	10534	246.5
Long	11973	8785	316.5
Long	10577, 9838, 10534	8785	418.
Long	9838, 9816	10365, 8842, 11917	
		8785, 10578	261.5
	8673, 9838, 8724	10578, 8785	

Contact of		Bright		Faint			
FF 10522	✓ A	37	10522 10534	10577	10578		
MF 10577	✓	38	10577 10578	10522	10534		
		39	" "	" "	" "		slight
	✓	40	10522 10534	10577	10578		
	✓	41	10577 10578	10522	10534		
no variation?		42	" "	" "	" "		+ faint very slight
	✓	43	10522 med 10534	10577	10578		
	✓	44	10577 10578	10522	10534		
	✓ A	45	" "	" "	" "		
	✓	46	" "	" "	" "		slight
	✓	47	" "	" "	" "		
FZ Sqr		48	10522 10534	10577	10578		
	✓	49	10577 10578 ms 10522 ms 10534				
HR N. 502	✓	50	10522 10534	10577	10578		
	✓ A	51	" "	" "	" "		
HV7326	✓ B	71	10577 10578	10522	10534		ft + slight var
Shrp	✓	72	10522 10534	10577	10578		
no variation		73	" "	" "	" "		slight
576 Sqr	✓	74	" "	" "	" "		
712 G 110	✓	75	10577 10578	10522	10534		very cl. double slight Fl of 2
709 "	✓	76	" "	" "	" "		
HV7343	✓	77	10522 med 10534	10577	10578		
685 Sqr	✓	78	10577 10578	10522	10534		2 ft
670 "	✓	79	10522 10534	10577	10578		
666 " G 116	✓ B	80	" "	" "	" "		
617	✓	81	10577 10578	10522			

pt - primary

157

Bright

Faint

11973, 10249

8673, 8885

11844

10271

10249, 10365, 10284

10141, 9828

8842

9828, 10284

11923

short

11844

10271
10284, 82661, 9838

11743, 9812

8785

10365, 8673, 11919, 11973, 11743

9838, 8785

mid 10365 10271, 8842, 10249

8785

11743
pt 10284, 9838, 8724

11973

MSA 10126, 8785

10271

MSA 10284
11743

9838, 8785

MSA 10126, 10365, 10240

10284

11662

Cluster 10271, 10249

10284, 8842

10365

13327, 10249

10249

Cluster A 10126

10524, 11662

0.405038

Cluster 10271, 8673

8842

0.57524

Cluster 11743, 9816

9838, 8785

0.460904

Eclipsing 8785

LONG 10524, 8673

10271, 8842

192.5

LONG 10365, 8842, 8785

11973, 11743, 9816

207

Cluster 11973, 8724, 10249

8785

0.52443

IRAE 10534, 8673, 11919, 11715, 11973

9838, 8785

(continued)

		Bright		Faint			
698 Sqr							
MF 10522	✓ B	82	10522	10534	10577	10578	
558 "	✓	83	"	"	"	"	
MF 10577	✓	84	10577	10578	10522	10534	
717 "	✓	85	10522	10504	10577	10578	slight
no variation		86	10577	10578	10522	10534	
702 Sqr	✓	87	"	"	"	"	
703 "	✓	88	"	"	"	"	
695 "	✓	89	"	"	"	10534	full of double
679 "	✓	90	10522	10534	10577	10578	slight
no variation	B	91	10577	10578	10522	10534	
609 Sqr	✓	92	"	"	"	"	
562 "	✓	93	10522	10534	10577	10578	
446 Sec	✓	94	"	"	"	"	
400 "	✓	95	"	"	"	"	slight
HV 7367	✓	96	"	"	"	"	
694 Sqr G100	✓	97	10577	10578	10522	10534	
672 " bbs	✓	98	10 "	"	"	"	
650 "	✓	99	10522		10577	10578	
7246	8	100	"	10534	"	"	slight
621 "	✓	101	10577	10578	10522	10534	
584 " G114	✓	102	10522		10577	10578	
defect of contact		103	"		10577	10578	slight
IQAAG-66	✓	104	10577	10578	10522	10534	
IR "	✓	105	10522	10534	10577	10578	
HV 7362	✓	106	10577	10578	10522	10534	
II GA	✓	107	"	"	"	"	107
H2 GA	✓	108	"	"	"	"	close comp
7283	B	109	10522	10534	10577	10578	

Low	11973	10146, 9838, 8842, 8285	242.6 ^d
RV Tau:	A 5333	10146, 8842, 11919, A13996	64.1
Low	11919, 11973	9838, 8285	227. ^d
Cluster	10240, 8785, 11662	9838	0.47466 ^d
Cluster	10534, 10365, 11919, 10271	11844, 8842	0.57079
Cluster	10534, 8842, 10249, A2659	10284, A2310	0.61710
Low	A2310, 11919, 11973, A2659	8785, A5355	222.5
Low	A13996, 9838, 11743, 9816	A2310, 10240, 8785	317. 6475
Cluster	13284	13287, 10271	0.47805 ^d
Cepheid	8785, A6533, 11743	9838, 11743, A5622, 11862	281.65
	10249	8785	
	10249, 8842		
Clust	10249, 11844	8842, 10271, 11973	—
Cluster	8785, 11662	9838	0.45265 ^d
Cluster	8673, 10284	10249, 13287, 8842	0.54365
Cluster	med 10534, 11919, 13287, 10271	med 8842, 10249	0.7789
SHORT	13287, 11844		
Low	A13996, A5355	A2659	269.
Cluster	med A13996, A5622	10534, 10365, 8842	0.443695
	185347		
Clust	11919, 10249	8385	0.45018
CLUSTER	A2310, 9828	10249, 11844	0.5095
SHORT	10249, 9828	11844	
Long	8673, 8785, A1676	9838, 10249, A5355	260.2
Cluster	10365, 10249, 10271	11844, 8842	0.57238
Eclipsing	10249, 10271, 8842	10576	—

		Bright		Faint			
{contact of							
HF 10522 +	✓	B 110	10517	10508	10524	10504	slight
"FW"							
HF 10577	✓	111	10522	10534	10577	10578	
FW 10536	✓	112	"	"	"	"	
EN 10536		113	10577	10574	10522	10534	this star varies as A phase
unstable to verify							faint
EH "	✓	114	"	10578	"	"	"
422 Sgr	✓	115	10522	10534	10577	10578	
417 Sgr	✓	116	10577	10578	10522	10534	
HN 7016		117	10577	10578	10522	"	
395 Sgr.	✓	B 118	"	"	"	10534	
{contact of							
HF 10522		119	10574	10577	10522		
HF 10574							
no variation							
✓	C	70	10577	10578	10522		
✓		71	10522	10534	10577	10578	
✓		72	"	"	"	"	
		73	10577	10578 med	10522		
✓		74	"	"	"	10534	
✓		75	10522		10577	10578	75 77
✓		76	10577	10578	10522		76
✓		77	10522		10577	10578	
✓		78	10577	10578	10522	10534	
✓		79	"	"	"	"	slight
✓	C	80	10577	10574	10522		
✓		81	"	10578	"		
✓		82	"	"	"		
✓		83	10522	10534	10577	10578	
✓	C	84	10577	10578	10522 med	10534	

No of
var
200

total

150

100

B

50

A

9

0

10

Bright

Faint

Cluster 11919, A2659

A5335

 0.53668

Long A13996, 9838, 8724

E285, A5335
10249

114.2

Long Cluster A2310, 9838, 9816, 8724

A13996, 8672, 8842, 8724

 99.4
 0.29752

B A13996?

10578

Cluster 8842

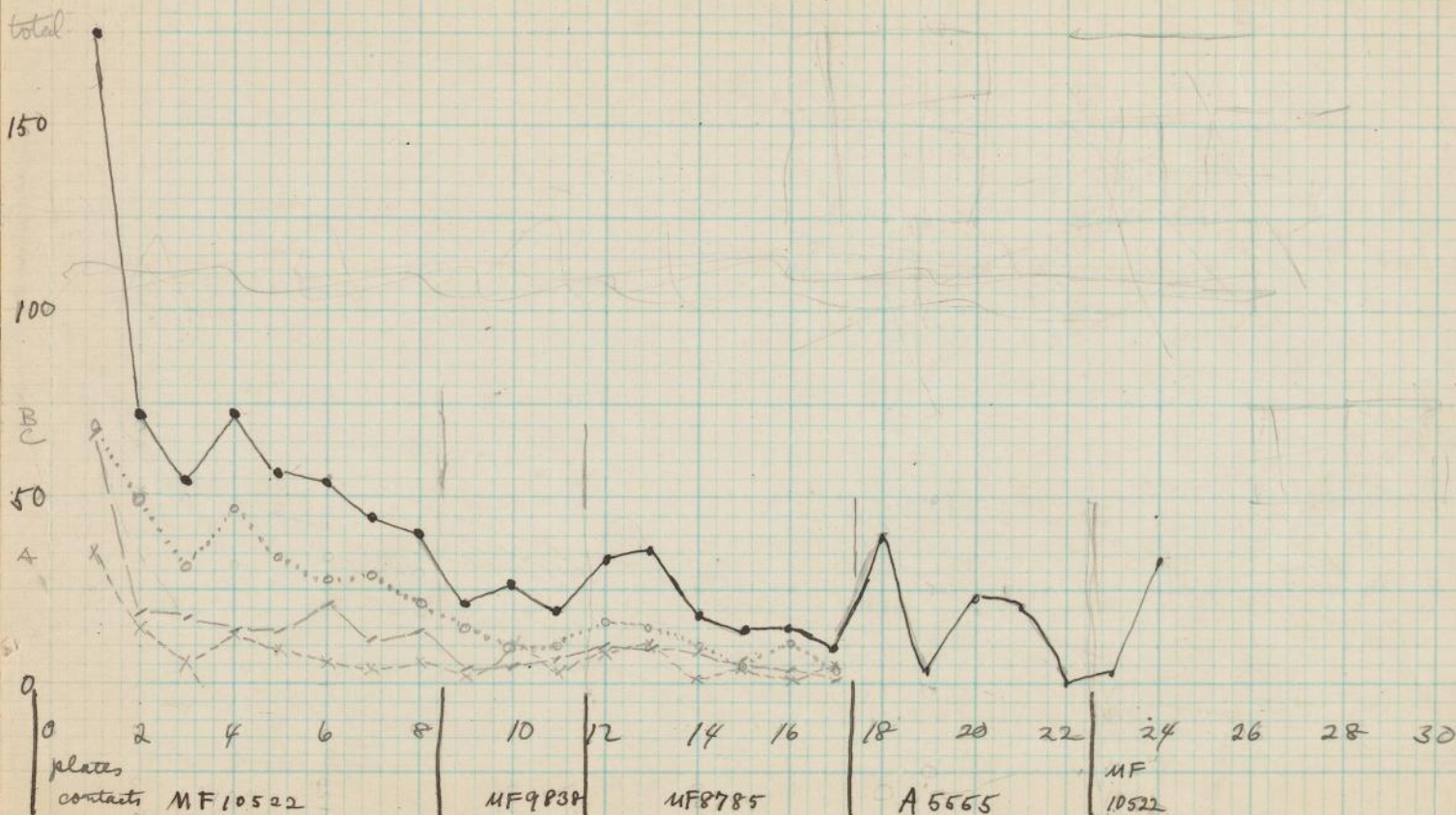
9838, 10271

 0.44016

Eclipsing 10249, 8842

 1.0762 No of
var
200

$\circ \cdots \circ$ B
 $- - -$ C
 $x \cdots x$ A



10534, 10271

10510, 10271, 10249, 8842

10534, 11847

10249, 8842

10539, 11919, 9838, 11923

10240, 8724

9838

10249

11548

8724

	Bright	Faint	
Cluster	11919, A2659	A5635	^d 0.53668
LONG	A13996, 9838, 8724	8785, A5635	114.2
Long	A2310, 9838, 9816, 11919	10249	^d 99.
Cluster	BL A13996?	A13996, 8673, 8842, 8505	^d 0.29752
		10578	
Cluster	8842	9838, 10271	0.44016
Eclipsing	10249, 8842		

10539, 10271	med 10249	10578, 8673, 8842
10534, 11847	med 10249	10249, 8842
10539, 11919, 9838, 11923		10240, 8785
9838		10249
11543		8785

Bright

Faint

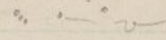
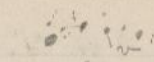
Cluster	11919, A2659	A 635	Δ 0.53668
Long	A13996, 9838, 8724	8725, A5635	114.2
Long	A2310, 9838, 9816, 8724	10249	$\cdot 99^d$
Cluster	Bl A13996?	A13996, 8673, 8842, 8805	0.29752
		10578	
Cluster	8842	9838, 10271	0.44016
Eclipsing	10249, 8842		1.0762
Long	A13996, 8785	8724, 11843, 9816, 10249	235
	Bl 10249		
Eclipsing	med 10534, Bl 10865, 8673		—
Long	10572	9838, 10249, 8842	244.5
	10534		
	10534	A2310	
	11973	11919, 11662	
	10534, 10249, 10365	10365, 8785	
	10365, 10534	8673, 10144	
	10284, 10249, 8785, 1	10534, 9838, 8724, 10249	
	10534, 10271, 8842	10249, 11844	
	10284, 8785	10534, 10365, 8673, 8672	
	10284	10271, 8842	
	10365	11844 med 10249	10271, 8842
	10534, 10271	10249, 8673, 8842	
	10534, 11844	10249, 8842	
	10534, 11919, 9838, 11923	10249, 8785	
	9838	10249	
	11743	8725	

checked

MF 10522

MF 10577

		Bright		Faint	
✓	C 85	10577	10578	10502	10534
	86	"	"	und sl	"
✓	87	10522	10524	10577	10578



slight

long

905 10579

10146, A13996, A5622

A 5555

OK 10365

10249

July 1929

contact of		ANS No.	Bright	Faint	
MF 10522	G74	✓ A 52	10146	10141	ms 10522 ms 10534
MF 10146		✓ 53	"	"	ms " ms "
G 80		✓ 54	"	"	" "
		✓ 55	"	"	" "
		✓ 56	"	"	" "
		57	10522	10534	10146
674 Sgr G 117		✓ B 120	10146	10141	ms 10522 ms 10534
639 Sgr		✓ 121	"	"	ms " ms "
634 Sgr G 115		✓ 122	10522	10534	ms 10146 ms 10141
613 "		✓ 123	10146	10141	10522 10534
591 " G 105		✓ 124	10522	10534	10146 10141
592 "		✓ 125	10146	10141	10522 10534
581 "		✓ 126	"	"	" "
555 "		✓ 127	"	"	" "
534. Sgr		✓ 128	"	"	" "
530 Sgr		✓ 129	"	"	" "
533 "		✓ 130	"	"	" "
528 Sgr G 126		✓ 131	10522	10534	10146 10141
7053		✓ 132	10146	10141	10522 10534
BNS Coor		133	10 "	"	" "
421 Sco		✓ 134	"	"	" "
414 Sco G 113		✓ 135	10522	10534	10146 10141
399 Sco		✓ 136	10146	10141	10522 10534
393 Sco		✓ 137	"	10534	" 10141
no variation		138	"	"	" "

so of cl. pr

slight

long
LP

double or Ap

pr of pr

131

132

v. Br star

Bright

Faint

10284, 9838, 8785

10578

8785

A10126, 9838, 8673, 8724, 11743 8785

8842, 10249

10579

9838, 11953

10365, 8842

10141?

LONG 10249

8785

249

LONG 9838, 8673, 8724, 9815

A10284, A13996, A2310, 8785

216

LONG 11705, 11773, 8724

8842, 9838, 8785

240.6

LONG 9838, 8785

8724, 10249

196

LONG 10579

A13996, 10284, 8842, 9815

276.5

LONG 8842, 8785

A13996, 8724, 9815, 10249

144.7

LONG 10284, 9838, 8673, 8724, 9815

A13996, 10578, 8785

218.6

LONG A13996, 9838

10284, 10578, 10249

191.1

LONG A13996, 8842

11919

143.1

LONG 10249, 8842

10365, 9838

145.3

LONG A5333

A13996

274.5

LONG A13996, 9838

10284, 8842, 10578, 8785

196.2

LONG 8673

med 10249 10284, 10271

LONG

616

LONG 8785, A5333

A13996, 8724

289

LONG A13996, 8842, 11705

10284, 9838, 8785

217.8

LONG 10249

A13996, 10365

259

ECLIP 11919, 8842, 11662, 10249

7.71257

9838, 10249

med 10249

166

(continued)

Contact of		Bright		Faint		
MF 10522+		B 139	10146	10522	10534	
390 Sco	✓	140	10522	10534	10146	10141
MF 10146						
389 Sco	✓	141	10146	10141	10522	10534
641 Sgr	✓	142	"	"	"	"
607 "	✓	143	"	"	"	"
HQ CrA	✓	144	10146	10534	10522	10141
GI CrA	✓	145	"	10141	"	10534
BK CrA	✓	146	"	"	"	"
FP "	✓	147	10522	10534	10146	10141
	?	148	"	"	"	?
✓ EY CrA	✓	149	10146	10141	10522	10534
EW "	✓	150	"	"	"	"
novae	✓	B 151	10522	10534	10146	?
GL CrA	✓	152	10146		10522	10134
7145	✓	153	10522	10534	10146	
	✓	C 88	10522	10534	10146	10141
	✓	89	"	"	"	"
	✓	90	10146	10141	10522	10534
	✓	91	"	"	"	"
G 26	✓	92	"	"	"	"
	✓	93a			10522	10534
	✓	93	10522	10534	10146	10141
	✓	94	10146	10141	10522	10534
	✓	95	"	"	"	"
	✓	96	"	"	"	"
	✓	97	"	"	"	"
	✓	98	"	"	"	"

Bright

Faint

Long	140	10141	
Long	AD284?, 8785	A13996, 9838, 8785	420:
Long	8842, 8785, A2659	A13996, 8724	295 ^d
Long	A2310, A5535	A13996, A2310, 11343, A5535	281.8
Cepheid	8673, 11919, A5555	A13996, A2659	188
Long	A13996, 8673, A2659	A5535	1.4149
Cluster			165.8
Long	A2659	8785, A5535	0.488915
This may be due to photo. effect of cl. intercomp.		10365, 9838, 8842	240
Long	11973, 10249	nsA2310, 8785	417.3
Long	9838, 8673	10528	214
?	10141?	10365, 9838, 8672, 11919	
Cluster	11718	ns10141	0.472325
Eclipsing	10141, A5622	A5535	

10579	8842
8785	9816
8673, 9838, 9816	10578, 8785
ns 10365	9828
med 10524, 9838, 10249	8724, 11743
8842, 11919, 8785	932, 10271, 10141, 8673, 10579, 11244
932a 10365, 9828, 8842	9828, 10271
8673, 10579, 11844	11705, 10578
9838, 8842, 11919, 8785	9838, A13996
10240, A13996	8724
10249, 10271	8785
11718	9828, 8842
10249, 10271	

168 (continued)

Photo of		NHSHo	Bright		Faint	
MF 10522	✓	C 99	10146	10141	10522	10534
MF 10146	6626 II ✓	100	"	"	"	"
	✓	101	"	"	"	"
	?	102	10522	10524	10146	10141
6621	✓	103	"	off plate	10146	10141
	✓	104	10146		10522	10534



Bright

Faint

mid 10249

10249, 8842, 9838

10284, 9838, 8724

10578, 8785

8673, 11919, 11973

8385

8842, 13287 ?

10241, 10365 ?

8842, 10559, A8996

8673, 10249, ~~5828~~

10284, 10240

10141, 9838

out of

Bright

Faint

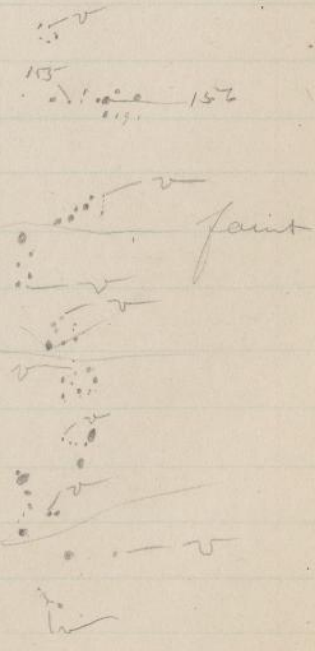
MF 10522	✓	A 58	10365	9838	10522	10534
MF 10365	✓	59	10522	10284	10365	10534
	✓	60	10365		10522	10534
no variation		61	"	"	"	"
	✓	62	10522	10534	10365	
	✓	63	10365	10534	10522	mod
	✓	64	10365	9838	10522	10534
	✓	65	10365	10284	10522	10534
		66	"		10522	10534
		67	10522	10534	10365	
	✓	68	10365		10522	10534
no variation?		69	"	"	"	"
F103	✓	A 70	10522		10365	10284



?

short

698 Sqr	✓	B 154	10522	10534	10365	10284
no var	✓	155	10365	9838	10522	10284
no var		156	"		10522	10284
671	✓	157	"		10522	10534
no var		158	10522		10365	
def on 10365		159	10365		10522	10284
627	✓	160	"	9838	"	10534
604	✓	161	10522	10534	10365	10284
no variation		162	10365		10522	10534
721 Sqr	✓	163	10522	10534	10365	
no variation		164	10365		"	"



Bright

Faint

11973

11284, 8785

10249

8842

10284 m 9838

" " "

10284-9838, 8785

8724

A10126

8724

med 10284, 9838, 8785

8785

10284, 10249

8785

9816

10284, 9838

10284, 9838

8842

med 10284

9838

9838, 10284

A10126, 10578 med 10529

9828, 8785

IRREG

10249

LONG

med 10249 9838, 10284 m 10249

289:

LONG

8842

10578

127.9

IRREG

8724

A13996, 8785

A13996

CLUST

9838, 9876

8673, 11705, 8785

172 (continued)

Started of	445N6	Bright	Faint	
92 Sqr	✓ B 165	10365	10522 10534	
MF 10522	166	10522 10534	10365	
684 "	167	10365	10522	
MP 10365	168	10522 10534	10365	
7268	169	10365	10522 10534	3814
very doubtful	170	" 10534	10522	
638 Sqr	✓ 171	10522 10534	10365	
614 " G122	172	" "	"	
585 "	173	10522 10534	10365	3818 135 [115]
577 "	174	10365 10284	10522 10534	
prob no variation	175	10522 10534	10365	
on A plate blurry images	176	" "	"	
699 Sqr	✓ 177	10365 N 9838	10522 10284	very faint
7338	178	"	10522 10534	3404 133-137
683 "	✓ 179	10522 10534	10365	
659 "	✓ 180	" "	" 10284	nebulous?
642 "	✓ 181	10522 10534	10365	
no variation	182	" "	"	
no variation	183	" "	"	
no variation	184	10365 10284	10522 10534	3709 136-145
no var	185	10522 10534	10365	
444 Sco	✓ 186	10522 10534	10365 9838	
434 "	✓ 187	" "	" 10284	
419 " G1112	✓ 188	" "	" "	fair
HV OA	✓ 189	10522	10365 10284	
HU "	✓ 190	10522	" "	
def of cont.	191	" 10534	10365	
HO OA	✓ B 192	10365	10522 10534	

	Bright	Faint	
Cluster	8842	incl 10284, 9838 10271	α 0.57948
IRREG	10244, 9838, 8842		
ECLIP	10249		
	9838		
LONG:	A13996, 2785	incl 9838 ~10284, 8724, 11743	73.1
Eclipsing	incl 10244, 9838 8842. α 13287		2.6448
LONG	<u>MS 11919, 11973</u>	8785	224.2
Eclipsing		incl 10271	3.8221
		9838	
LONG	α 10249		
	8672, 11705, 10240, 11743	9838, 8785	145
ECLIP:	29838	10240	
Eclipsing		AF13287	0.583607
IRREG	A2310, 8724	10534, 8785	
Cluster	10574	9838 29838, 10284, 10578	α 0.51412
	11F8673	A2310, α 87537	
		8842	
	2842		
LONG		9838	-
	~ 10284, 9838, 8785	11743	
LONG	A13996	10284	128.8
LONG		9838, 8785	153.1
LONG	10578	incl A13996 9838, 8785	214
Cluster	A2310, 8785	10534, 9838, 8673, 18728	α 0.65005
Cluster	10578	" "	0.7059
	9838		
Cluster	8673	10284, 9838	α 0.48744

Contd of	HAB	Bright	Faint	
MF 10522	✓ B 193	10522	10534	10365 10284 JWGA
VFYGA	✓	194	10365 mid 10284	10522 10534
MF 10365	✓	195	10522 10534	10365
no variation	✓	196	" "	" 10284
no var	✓	197	10522 10534	10365 9838
prob no variation	✓	198	10 " "	" " 10284
406 Sco.	✓			
✓ C 105	10365	"	10522 10534	
✓ 106	10522	10534	10365 10284	
✓ 107	10365	10284	10522 10534	
✓ 108	"	"	" "	
HHL No 72	109	10522 10534	10365 10284	
✓ 110	10522	9838	10365 10284	
✓ 111	"	"	" "	
✓ 112	"	10534	"	
113	10522	"	10365 10284	
✓ 114	10365	9838	10522 10534	
✓ 115	"	10284	" "	
no var two stations	✓ 116	"	" "	
✓ 117	"	9838	" "	
10499	✓ 118	10365	10522 10534	VSYSSW

Old Variables found 63

CD3 1 Published 12

HHS 50

	Bright	Faint	
SEMI REG:	9838, A2310, 10249A9061	8785 A 5565	
LONA	A2310, 8785	9838, A13996	212.2
	A2310, A5622	A5565	
LONA			210.7
	8842	10271	
	A2310	8842	
	8842		
	10534, 10284	10534	
		8673	
		11662	
	9838	10284	
	10271	9838	
	8842, 11919, 11923, 8724	10284, 8785	
	8842	9838, 10284	

		HHS No	Bright		Faint		
MT 18522	✓	A 71	MF 9838	MF 9828	MF 10522	MF 10534	
MF 9838	✓	72	"	"	"	"	
		73	10522	10534	9838	9828	
	?	74	"	"	"	"	
HHS No 24		75	9838		10522	10534	
	✓	76	9838	9828	10522	"	
		77	"	"	"	"	
		78	"	10534	"	"	
	?	A 79	"	9828	"	10534	
705 Sqr	✓	B 199	10522	10534	9838		
	✓	200	"	"	"		
7270	✓	201	10522	"	"	9828	
644 Sqr	✓	202	9838	9828	10522	10534	
619 Sqr	✓	203	"	"	"	"	
no variation		204	9838	10534	10522		
529 "	✓	205	"	9828	"	10534	
no variation		206	"		10522	"	
386 Sco	✓	207	10522	10534	9838		
615 Sqr	✓	208	9838	9828	10522	10534	
605 Sqr	✓	209	"	"	"	"	
573 Sqr 95.	✓	B 210	10522	10534	9838	9828	
549 Sqr 90	✓	211	"	9828	"	10534	
538 Sqr	✓	212	9838	9828	10522	10534	
540 "	✓	213	"		"		

long

but

eclips?

short

red

Bright

Faint

9816
 ~ 8673, 8724, 9816
 10365 B A 2606
 maybe due to close companion
 8785
 8842
 10284, 10265, 9828, 10271, 8842

10578, 10240, 8785
 11705, 10575, 10240, 8785
 11662
 11713, 11743
 11919, 11705, 10578
 med 10574

ECLIP	9828, 9816, 11705, 8785	11919, 11973 8842	1.22776
SHORT			
IRREG	8842	10271	
LONG	9816, 10249		254.3
LONG		10578 9828, 9816	196
ECLIP	9828, 9816, 11705, 10578, 10240	8673	1.7769
IRREG	A 13996, 8673, 8785	A 2310, 10240	
LONG	9816	10240 10284, A 13996, 11705, 10578	267.5
Eclipsing			0.97704
LONG	A 13996	8842, 8785, A 2310	312
LONG	11919, 11773, 9816	10578, 8785, 8	256
IRREG	11919, 11773, 11743	8785	

unlabeled

HNS No. B + light Faint

MF 10522							
536 Sqr		B 214	MF 9838		MF 10522		
MF 9838	✓	215	"	9828	"	10534	
442 "	✓	216	10522	10524	9838	9828	
440 Sw	✓	217	9838	9828	10522	10534	
surf	✓	218	10522	10524	9838	9828	
426 Sw	✓	219	9838	9828	10522	10534	
Suspected but Chp 36		220	9 "	"	"	"	
no confirmed	✓						
6926	✓	221	9838	9828	10522	9828	
654 Sqr	✓	222	"	"	"	10534	
HNS 190		223	10522		9838	9828	
def							
same as HNS 191		224	"	10534	9838		
HK GrA	✓	225	9838	9828	10522	10534	
7498	✓	226	9838	9828	10522		
DV GrA	✓	227	"	"	"	10534	
436 Sw	✓	228	10522	10534	9838	9828	
433 "	✓	229	"	"	"	"	
411 "	✓	B 230	"	"	"	"	
388 Sw	✓	231	"	"	"	"	
385 Sw	?	232	9838	9828	10522	10534	

✓	C 119	9838	9828	10522	10534	
✓	120	"	"	"	"	
	121	9838		10522		
✓	122	10522	10534	9838	9828	

Bright

Faint

LONG			187.7
IRREG:			
LONG	8673, 11973, 9816	8785	212.5
		8673, 11919, 11662	
LONG			211
	10365		
ECLIP	A13996	med 10534	
LONG	8673	8842	440 ^d
		med 10524	
		9816	
Long	11919, 8785	10578, 8724, 10249	196 ^d
Eclipsing	10534, 8673, 11919, 11662	8842	3.4714050 Prim.
-LINT	11919, 9816	8785	206.5
LONG		A13996, 8785	213.5
IRREG	11705 A13996	A6355	
RV Tau	10578		135 ^d
LONG		8785	413
Eclipsing	10271		2.34515
	8673, 11919, 11973	10578, 10240, 8785	
	8842, 10240, A2659	10578, A6355	
	8785	8842, 11919, 8724, 10249	

Content of	not nucleus in Burt series	MHS No.	Bright		Faint		
MF 10522		C 123	9838		10522		not 100% d per
MF 9838	✓	124	"	9828	"	10534	
	✓	125	"		"	10534	
	✓	126	"	9828	"	10534	
	✓	127	"	"	"	"	
CDB 141	✓	128	"	"	"	"	
	✓	129	10522	10534	9838	9828	
G 37	✓	130	9838	9828	10522	10534	
	✓	131	10522	10534	9838		
	✓	C 132	9838	10534	10522	9828	

Bright

Faint

8785

10271

8842

A 5622

A13996, 8842, 8785

8785

8724

A9061?

10578, 11943

8842

10538, A5535

10240

MS 10284, A9061, 10578

8842

MS 10284, A9061, 10249

8785

182

X

Content of

MF 10522

MF 8673

H/SH

Bright

Faint

✓

A

80

MF 8673

MF 10522

10534

✓

81

"

"

"

✓

82

8673

8724

"

"

83

10522

8673

✓

84

8673

8842

10522

10534

A

85

10522

10534

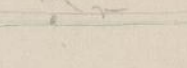
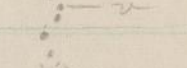
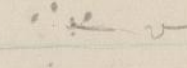
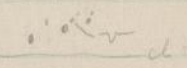
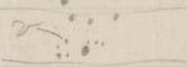
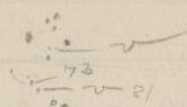
8673

dif.

8673

10522

10534



double: so of

so of pr

sch.

in op. d

675 Sqr

✓

B

233

8673

10534

10522

?

✓

234

10522

10534

8673

657 Sqr

✓

235

8673

10534

10522

582 "

✓

236

10522

8673

10534

407 Sco

✓

237

8673

8724

10522

10534

V 381 Sco

✓

238

8673

"

"

"

7303

✓

239

8673

8724

"

"

667 Sqr

✓

240

8673

"

"

631 Sqr

241

10522

8724

8673

8534

7216

242

8673

10522

10534

611 Sqr

✓

243

"

8724

"

"

601 Sqr

✓

244

8673

8534

"

"

640 Sqr

✓

B

245

8673

8724

"

"

GZ CrA

✓

246

8673

8724

10522

10534

V GX CrA

✓

247

"

"

"

"

629 Sqr

✓

248

"

"

"

"

V GS CrA

✓

249

"

"

"

"

Bright

Faint

11919, 11973

8537, 8724, 8725

seen faintly

10572
10579

" "

9828

10249

prob due to fact star is unresolvable double

8537, 8724

8842

def. of contact

Cluster	8537, 8724	10365	^d 0.64230
	8724, 9838, 10365	8842	
Cluster	8537, 8724, 10249	10365	0.501525
Cluster	9838	10365	0.53809
Long	A13996	and A1011 8537, 8787, 10249	396
EclIP	8537, 8842, 11919, 11705, 8785	9838, 7810	^d 6.545
Long	10249	8537	—
Cluster	9816	" , 8724, 8785	^d 0.523735
Eclipsing		1973	0. P23608
Long		8537, 8724	
Long	A5622 , A2659	" 8785, A5335	116.8
Cluster	9828	8724	0.59181
Long	11919, 11743	8785	285.5
Long	11919, 11705, 11743, A5335	8537, 9838, 8785	277.5
IRREG	8537, A5335	A2659	
Long	11662	8537	277
Long	A2310, 11919, 11705	" , 9838, 8725	282

Cont of

1928B

Star of		4th No.	Bright	Faint			
MF 10522	no variation	B 250	MF 10522	10534	MF 8673	8537	
ETCA	V	251	8673	8537	10522	10534	
MF 8673	V	252	8673	"	"	"	
550 Sqr	V	253	"	8724	"	"	
431 Sqr	V	254	10522	10534	8673	8537	
412 Sqr	V	255	8673	8537	10522	10534	
HPGA	V	256	"	"	"	"	
HNCA	V	257	10522	10534	8673	8724	
FL "	V	258	8673	8724	10522	10534	
408 Sqr	V	259	8 "	"	"	"	
560 Sqr	V	260	"	8537	"	"	
	V	C 133	10522	10534	8673	8537	
	V	134	8673	8724	10522	10534	
def.		135	10522	10534	8673		
	V	136	8673	8724	10522	10534	
	V	137	8673	"	"	"	
	V	138	8673	8724	"	"	
	V	139	"	"	"	"	
	V	140	8 "	8537	10522	10534	
	V	141	10522	8537	8673	10534	
	V	142	"	10534	"	8537	
		143	10522	"	8673		
	V	144	8673	"	10522	10534	
	C	145	10522	10534	8673		
	V	146	8673	8724	10522	10534	
	V	147	8673	10534	10522		

shot
one of the

	Bright	Faint	
	8842, 9828	8724	^d
LONG	A2659	med 8724 A5555	316
LONG	9828	" 8724 10265	277
LONG		A13996 8537	263.5
Eclipsing	A5622	A5555	0.420662
Long	A9061, 11919, 11705, 11973, 5333	8724, 9838, 8785, 13996	144. ^d
Cluster	10365	8537, 8724	^d 24941
IRREG.	8537, A5555	8842, 82689	
LONG	11919, 8785, A5555	8537, 9816, 10249, A13996	469
		8537, 8724, A2310, A13996	
LONG	A13996, 11919, 11973	10284, 8785, A5555	211.1

A9061, 10578,	8724, A2310, 9838, 8785
A2310, 11919, 11973	8537 A9061, 8785
defect of MF 8673	
A2659	med A13996 8537, A2310, 8785, A5555
A9061	" 8724, A2310
8785	" , 10271
11919	" 8724, A2310
9838, 8785	8724, A2310, 10578, 10240
10579	9828
10240	8724, A9061, 9858
10249	
A9061	8537, 8724, A2310
8537, 8724, A2310	
11919, A5555	8537, A2310, A9061, A13996
8537, 8724	9828, 10579

Constancy		NHP No	Bright		Faint		
MF 105224	✓	C 148	8673	10524	10522	8537	faint chart
UF 8673	✓	149	8673		10522	10534	
	✓	150	10522	10534	8673		bright chart
	✓	151	8673	10534	10522		
H.V. 6658	✓	152	8673		10522	10534	
6603	✓	153	"	8724	"	"	

Bright

Faint

87243

10579, 8842

10249

mid A13996?

10271

8724, A9061, 8842

10249, 10271

A9061, 10578

9838

11973, 11919

8537, 8724, A9061

11705, 11662

8537, 9838, 8785

Content of		HH No.	Bright		Faint		
MT 10522	✓	A 26	8842	8785	10522	10534	
MT 8842	✓	27	"	"	"	"	
	?	28	10522	10534	8842		
		29	8842		10522	10534	
652 Sqr	✓	B 261	8842		10522	10534	
626 "	✓	262	8842	8785	"	"	
624 "	✓	263	"	"	"	"	
606 Sqr	✓	264	"		"	"	
574 "	✓	265	10522	10534	8842		
556 Sqr	✓	266	8842	8785	10522	10534	
394 Sco	✓	267	"	"	"	"	
no variation		268	10522	10534	8842	8785	
669 Sqr		269	8842		10522	10534	
690 Sqr		B 270	8842		"	"	
663 "	✓	271	"	8785	"	"	
646 "	✓	272	10522	10534	8842		
616 Sqr	✓	273	8842		10522	10534	
603 Sqr	✓	274	"	8785	"	"	
572 "	✓	275	"		"	"	
565 Sqr	✓	276	"	8785	"	"	
DUGA 437	✓	277	"	"	"	"	
487 Sqr	✓	278	10522	10534	8842		
427 Sco	✓	279	8842	8785	10522	10534	
		B 280	10522	10534	8842		
HSCA	✓	281	8842		10522	10534	

bright

Bright

Faint

	A13996	8724, 10249	
	A10126	9838	
LONG	A2310	8785	^d 256.8
Cepheid	A13996, 11919, A2659	10284, 8724, A5555	^d 26.80
LONG	A10126, A2659	10284, 9816, 10249, A5555	257.6
LONG	10284, 10240	8785, A13996, 9838	284.5
Eclipsing	9838		^d 1,6712
LONG	10249	9838	285.4
LONG	9838	10271	403
	10291		
LONG			255.6
LONG			250.7
LONG	10240	9838, 11973, 8724, 9816	305
SEMI REG	8785, A5622	A5555	97
CLUSTER	10249		^d 0.48551
LONG	A2310	A13996	292
LONG	A13996, A2659	A5555	230.7
LONG	A2659	A13996, 8724, A5555	253.5
LONG	8785	8724, 11942	283.8
Eclipsing	8785	11973	^d 4.88
LONG			237
	8785		
Long	A13996? A2659	8785, A5555	236 ^d

contact of		MMS No	Bright	Faint	
MF 10522	def	B 282	8842	10522	10534
PMCA	✓	283	10522	10534	8842
EU CA		284a	16577	10574	8785
EU CA	✓	284	8842	10522	10534
EQ CA	✓	285	"	8785	"
392 Sco		286	"	"	"
545 Sgr		287	"	"	"
877	7231	288	"	"	"
G PCA	✓	289	"	"	"
					284a found when near 284
					close per
	✓	154	10522	10534	8842
	✓	155	8842	8785	10522
	✓	156	"	"	"
	✓	157	"	"	"
	✓	158	"	"	"
	✓	159	"	8785	"
	✓	160	"	?	"
	✓	161	"	8785	"
	✓	162	"	"	"
	✓	163	"	"	"
		164	10522	10534	8842
	✓	165	8842	10522	10534
					maybe due to scratch on 8842

Bright

Faint

LONA

284a is a CLUSTER

24

on B plate, LONA

A 13996, 10578

A 2310

LONA

10249

LONA

mid 8785

LONA

8785

A 2310, 9838, 8785

8785, A 13996

A 13996

8785

8785

8785, 9838, 10271

278

0.445995

244.5

206.5

248

250

0.

0.43631

9838

A 9061,

8724, 11543

A 9061, 11543

11993

10249

11993

A 9061, 10249

10249

10365

8785

11993

msA 2310

8724, 10249

8785

1

11

10365

10249

A 9061

11993?

mid 8785 A 9061

192

11.1 1919

last of	MM	MM	Bright	Faint	
MF 10522	✓	A 90	11919 11899	10522 10534	pre of 2 pc
MF 11919	✓	91	" "	" "	
		92	10522 10534	11919 11899	pre of 2 pc
Reg	✓	93	11919 11899	10522 10534	fall of 2
	✓	94	10522 10534	11919 11899	
	?	95	11919	11899	rel.
707 Sqr	✓	B 290	11919 11899	10522 10534	
645 "	✓	291	" 11919	" 11899	
586 "	✓	292	" 11899	" 10534	
		293	10522	11919	
561 Sqr	✓	294	11919 11899	10522 10534	
537 Sqr 314	✓	295	" 11899	" "	
402 Sco	✓	296	" "	" "	
RP Sco	✓	297	11919 11899	ms 10522 ms 10534	No. 1
680 Sqr	✓	298	" "	" "	
700 Sqr	✓	299	" "	ms 11899	
IM CrA	✓	300	" "	" "	
no variation		301	" "	" "	
IK CrA		302	ms 8842	9816	v ft
		303	" "	" "	
HX CrA	✓	304	10534	" 11919	
HM CrA	✓	305	11899	" 10534	
GM "	✓	306	" "	" "	
722 Sqr 7089		307	10522 10534	11919	
GT CrA		308	11919 11973	10522 10534	
EX "	✓	309	" "	" "	
551 Sqr		310	" "	" "	

Bright

Faint

A10126, 11705, 11743

9835, 8785

11705, 11973, 11743 red A10126

9838, 8785

A10126, 11705, 8842, 9828, 10365

9838:

8785, 13287

10284, 8842, 10365

10365, 10284, 8673, 10141

11973, 13287

Cluster 9838

10575

^d 0.51270

Cluster

A2310, 10249, 8842

0.51406

Long A10126, 8785,

A2310, 9816

288.5

8842

10284

Long A2310, ^{red} 11973

A10126, 8785

406.3

Long 11743

8785

296^d

Long 11973

A13996, 8785

262

Nova

Long A2310, ^{red} 11705, 10578, 11743

9838, 8785

214

Cluster 10271

A2310, 10249

^d 0.63419

Long 11973

8785

^d 212.4

IRREG

9828

Cluster

11973, 11973, 9828, 8842

^d 0.6593

Long 11844

8842

257

Long VA13996, 11973, *

8785, A5355, A2659

224.6

Eclipsing 10249, 11844

^{red} 11844

Cluster 10249

8842, 10271

^d 0.45711

Long 11973

8785

308:

SSQ9

11029, 11973, 10249

" " 10249

study	HH No.	Bright	Faint	
HP 10532.9	✓ C 166	11919	11972	10532 10534
HP 11919	✓ 167	"	11899	"
	✓ 168	"	11973	" 10534
?	✓ 169	"	11899	"
	✓ 170	"	"	"
?	✓ 171	"	"	"
	✓ 172	"	11973	"
	✓ 173	"	11899	"
	✓ 174	"	"	"
	✓ 175	"	10534	"
	✓ 176	"	11899	" 10534
	✓ 177	"	"	"
	✓ 178	"	"	"
H.V. 6610	✓ 179	"	"	"

Sox of pair

one of cl pr
prob cl pr

prob pr

Bright

9828, 8842, 13287, 13844

10249, 8842, 10271

9830, A5555

mid 13287

A9061, 9816

10146

11943

11705, 11743, 11662

10579, 11844

A5355

A13996

10249, 8873

8842, 11844

11743, A8996

Faint

10271, 10284

11844

98578, A2659

10284

A9061, 10249, 10271, 10365

8785

A9061, 10249, 8842

8785

ns A9061, 9838, 8785

A9061, 10249, 8842

A2659

A5355

10271, 8842

10249, 13287, ns A8996

8785

196

		HH No.	Bright		Faint		
<i>outburst</i>							
MF 98388	? ✓	4 96	9838	9816	11705		<i>Eberhard effus?</i>
MF 11705	✓	97	11705	11718	9838	9828	
		98	9838	9818	11705	11718	
		B 311	11705	11662	9838	9816	
708 Sqr	✓	312	"	"	"	"	
706 Sqr		312	9816	9842	11705	10534	
673 Sqr	✓	313	"	"	"	"	
HH 18298		314	"	11718	"	"	
<i>variations due to elongation</i>		315	9838		11705		
677 Sqr	✓	316	11705	11662	9838	9828	
686 Sqr	✓	317	"	"	"	"	
7238		318	11705		9838		
G H CA	✓	319	"	11662	"	9828	
		320	9838	"	11705		<i>cl per</i>
EP CA	✓	321	11705	9828	9838	11662	<i>short</i>
<i>no variation</i>		322	9838		11705		<i>end star?</i>
		323	"	9828	"	11662	
<i>defect</i>	?	324	"		"		<i>cl per</i>
383 Sco	✓	325	"	9828	"	11662	<i>steps?</i>
<i>no variation</i>		C 180	11705		9838		
	✓	181	9838	9828	11705		<i>eclipsing?</i>
		182	"	"	"	11662	<i>red</i>
	✓	183	9838	9818	11705		<i>eclipsing</i>

Bright

Faint

10146, 8673, 13287

10579, 13287, 11844

11973, 11943

8785

11844, 8673

10578

10522

8673

Cluster
Cluster
LONG

11743, 10249,

8785 8673

^a
0.48192
0.68153

11743,

8785, 10522

291.5

10249, 10146, 10572

10522, 10737, 13287

Cluster

A13996

A0335

0.444706

LONG

10578, 10522, 10572

10249

225.3

ECLIP

H844

10146

LONG

11844

je 8673

10522, 10579, 13249

299.6

variation may be caused by elongation

~9855

11705

Cluster

11718, 10284, 10578, 10534

A385, A555

0.65683

10249

med 11844 13287

elongation?

defect of MF 9828

ECLIP

10284, 8785, 10522

11743,

^d
4900

11662, 10522, 13249

13134

11662, 10522, A2996

med

11973

10284

198

Aug 29, 1929

92 rediscussed 92 variables

out of		H&N No	Bright		Faint		
UF 9838+	✓	A 99	9838	9816	10578	10579	
UF 10578	✓	100	10578	10579	9838	9816	
	✓	101	"	"	"	"	
	✓	102	"	"	"	"	
	✓	103	"	"	"	"	
		104	9838	9816	10578	10579	
G 121	✓	105	10578	10579	9838		
G 129	✓	106	"	"	"	9816	
no variation		107	9838	9816	10578	10579	
	✓	108	"	"	"	"	
	✓	109	10578	10579	9838	9816	prob d comp. fuzzy
719 Sqr	✓	B 326	9838	9816	10578	10579	
676 Sqr	✓	327	10578	10579	9838	9816	
		328	9838	9816	10578	10579	
578 Sqr	✓	329	10578	10579	9838	9816	double
432 Sw	✓	330	9838	9816	10578	10579	
prob no variation		331	10578	9816	9838		
no var	✓	332	9838	9816	10578	10579	1st
DX UA	✓	333	"	"	"	"	
defect		334	"	"	"	"	
7336	✓	335	"	"	"	"	
	✓	C 184	9838	9816	10578	10579	
	✓	185	10578	10579	9838	9816	
NWUA	✓	186	9838		10578	10579	
		187	"	9816	"	"	
	✓	188	"	"	"	"	
HV 6581	✓						

Bright

Faint

8785	A1012, 10240, 10249
11844, 10522, 10572	10249 8673
10572	10249, 8673
10522, 10572	10249, 8673
13287	
10240, 10249, 10572 mid 10522	10146
10249	10572, 11844
8785	mid 9816 10249
10522	10249
A1012	
A1012, A13996, 10249	11844, 10146, 10572
11943 10249	
10249, A13996, 11973, 10524	A1012, 8785, 13287

IRREG
LONG

8785
11973, 10524, 8724, 10249 A2310, 8785
A13996, 10249 mid 10146

d
181.

LONG

8724, A10996, A2659

8785, A5335

188.9

IRREG

A13996

10240, A5335

10249

8673

8673

mid 13287

IRREG

11973

8785

defect of MF9838

SHORT

A2310, 10249

11844

8785

10240, 10534, 10249

10572

10522, 10249

A9001, 11943

9828, 9816, 8785



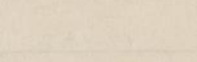

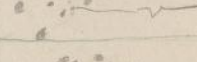
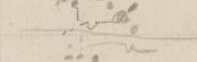

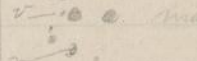

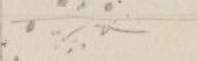

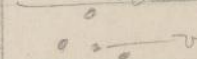
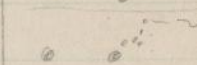
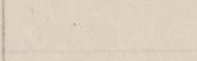
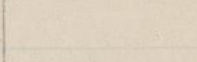
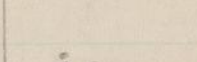
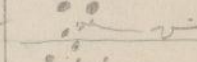
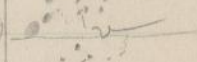
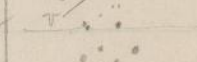

8785

10534

9828

10522, 10249

1929ph

stand of	HR No.	Bright	Faint				
MF 9838	A 110	9838	9828	10240	10249		slight
MF 10240	? ✓ 111	10240	10249	9838	9828		"
	112	"	"	"	"		A103.
718 Sqr	✓ B 336	10240	10249	9838	9828		
715 Sqr	✓ 337	10240	9828	9838	10249		slight
587 Sqr	✓ 338	9838	9828	10240	10249		
430 Sco	✓ 339	9838	9828	10240	10249		The var. magnitude over
	? 340	10240	9828	9838	"		
HR CrA	* ✓ 341	9838	9828	10240	10249		
570 Sqr	✓ 342	"	"	"	"		
DT CrA	* ✓ 343	10240		9838			
409 Sco	✓ 344	9838	9828	10240	10249		
3891 = 7.324	✓ 345	10240		9838	9828		
	✓ C 189	10240	10249	9838	9828		
	✓ 190	9838	9828	10240	10249		
	✓ 191	10240	10249	9838	9828		
	? ✓ 192	10240	10249	9838	9828		
	✓ 193	9838	9828	10240	10249		
no var too ht	✓ 194	10240	10249	9838			slight
	✓ 195	9838	10249	10240			eclipsing

Bright

Faint

10572

10522 8676

13287,

11844, 10572

10522, 10572

Long 8785

1020

153.2^d

CLUST 10522

med 9816

11844

0.61914

Long A13996, 8785

8724

170

Long A13996

clipping of my star 13287

10522

172.7

10146, 10572

8673

SEMI REG: 9816

8785

Long 10534, 9816

8785

265

Cluster 8673

10572, 10146

0.45411^d

Long 8785, A12996

8724, 11843, 10249, A6565

173.5

Cluster 10146

med 10749

10572, 11844

0.

10271, A2310, 11973

8785

A9061 & A2310, 8785

10271, 11973, 10534, 10249

10534.

A2310, 8785

8785, 10572, 8673 8785

9916, 11919

9816

A13996, 8785

10141, 8673, 13287

med 11662

11973

10572, 8673

med 9828

13134

Antech of		AMS No.	Bright		Faint		
MF 8785	✓	A 113	MF 8785	11973	MF 11973	11919	Comp
MF 11973	✓	114	11973	12285	8785	8842	
no variation		115	11973		8785		
	✓	116	"	8842	"	11919	
no variation		117	11973		8785		
"		118	"		"	12285	
no variation		119	"		"		
		120	"	11919	"	8842	
590 Sqr	✓	B 346	11973	11919	8785	8842	
564 Sqr	✓	" 347	8785	8842	11973	12285	
548 Sqr	✓	" 348	8785	8842	11973	11919	20 of cl pr
701 "	✓	" 349	8785	11919	11973	8842	
691 Sqr	✓	" 350	11973	11919	8785	8842	
727	✓	" 351	11973		8785	8842	
662 Sqr	✓	" 352	11973	11919	8785		
580 Sqr	✓	" 353	11973	8842	8785		fuzzy
Prob no variation		354	11973	11919	8785	8842	slight
397 Sco	✓	" 355	"	"	"	"	
Prob no variation		356	"		"		
IO CrA	✓	" 357	8785		11973		does this star vary?
V FZ CrA	✓	" 358	11973		8785	8724	
no variation		359	11973	11919	8785	8842	
416 Sco	✓	" 360	"	"	"	"	30 of cl pr
410 Sco	✓	" 361	"	"	"	"	
	✓	C 196	8785	8724	11973	11919	

Bright

Faint

	mid 8842	10534, 11743, 10249	
13287		15A10126, 13522, 10579	
AD 240, 10249			
8742, A10126, 9814	12285	13287	
10146		11844	
		10522	
SEMI REG	11844, 13287	10146 10146	
CEPH	11919	8724, 10534	27.8
LONG	13287, 13327	8673	183.6
CLUSTER		10534, 8724, 10249	^d 0.62654
CLUSTER	10534, 10522	8724, 9816	0.46911
LONG		13287, 10249	
CLUSTER	8842, 8724, 10522 A2659	8724, 11919, 12285, 10284, 10522	
IRREG	10579	10146, A2310	0.41211
	10522	12287	
LONG	A13996	10146	
	10146	11572, 10146	224
LONG	10522, 11844, A2659	10579	
CLUSTER	10328, 11844, 10572	9816, 10249, A2310	170 ^d
	10249, 13287	10146, 8673	0.53527
LONG	A5622	10522	
LONG	13134	8673	
		A5535	327
		10522, 10249	303.5
	10579	10249, 8673, 11844	

(cont.)

		Bright		Faint		
outburst						
MF 885	✓ C	197	11973	11919	8785	8842
MF 11973		198	"	"	"	"
MA 024	✓	199	8785	8842	11973	11919
prob no var.		200	"		11973	
	✓	201	11973	8842	8785	8724
	✓	202	8785	8724	11973	11919
	? ✓	203	11973	11919	8785	
HV. 6663	✓	204	11973	11919	8785	8724
	✓	205	11973	"	8785	8842

Old Variables found 107

CDB 10 Published 29 H/L & 14 B, 34, C 20

Bright

Faint

11844

13287, 8673

8724, 9816, 10522, 10287, 10146

8673,

A9061

10534, 11743, 9816, 10249

8673, 10249

11919, 10146, 11844

8673

10249

A9061, 10534, 11743, 9816

10539, 10146

10249

8842, A9061, 9816

10539

10522, 10249

206

contact of	HH No	Bright	Faint	
MF 8785 & MAG 109	✓ A 121	8785 8842	10534 10522	
MF 10534	✓ 122	" "	" "	
?	✓ 123	" MF 8842	" "	
?	✓ 124	" "	" "	
MF 10534	✗ 125	8785 8842	8785 8842	
?	✓ 126	8785	10534	
?	✓ 127	"	" 10522	
✓	128	" 8842	" "	
✓	129	" "	" "	
?	130	" 8724	" 10522	
✓	131	10534 10522	8785 8842	
720 Sqr	✓ B 362	8785 8724	10534 10522	
no var	363	10534 10522	8785 8842	
655 Sqr	✓ 364	8785 8724	10534 10522	
647 " "	✓ 365	8785 and 8842	" "	
568 "	✓ 366	8785	" "	
566 Sqr	✓ 367	10249 10271	8785 10534	
546 "	✓ 367	" 8842	" "	
defective image on MF 10534	✓ 368	10534	8785 8842	
687 Sqr	✓ 369	8785 8724	10534 10522	
IU CrA	✓ 370	8785 8724	" "	
678 Sqr	✓ 371	" "	" "	
HY CrA	✓ 372	" 8842	" "	
HW "	✓ 373	10534	8785 8842	
625 Sqr	✓ 374	8785 8724	10534 10522	
no var	375	10534 10522	8785	
535 Sqr	✓ 376	" "	" 8724	

fall of d for
one of p. a. - b. p. a.

faint

double

ft

bet. slight

Bright

Faint

10249, 10271

10245

10365, 9828

10249, 9828, 10271

mid 8842

8724, 11743, 9

10271, 11972

mid 10284

10365, 8842, 13287

10579, 10582

8724, 10249, 10284, 11919

11844?

9828 10249?

10284, 10579

10146

8724, 10249, 9828

10249, 10271

10249, 10271

9828, 13287

Long

10249

264^d

10249, 9828, 10271

Long

A2310 A5555

A13996

262

Long

A2310, 10271, 13287 mid 10249

11844, 10146

88.2

Long

Cluster 66

10249, 10284

8842, 8724

8842, 10146

210

0.59683

Long

A13996

10249, A5555

246

13287?

8842

10522

Eclipsing

10249, 10365

10271, 9828

0.646155

Long

10249

251.6

Cluster

10249, 13287

8842

10241 8842

0.47040

Irreg

10249

mid 2073

10579 13287

Cluster

11844

10249

0.44928

Long

A13996

11243, 10249

146.8

10249

Long

8842, 10365

10249, 9828

212

(cont)

contact of	HHP No.	Bright		Faint		
MF 8785 +	✓ C 206	10534	10522	8785	8724	
MF 10534	✓ 207	8785	8842	10534	10522	
	✓ 208	8785	8842	"	8724	
	✓ 209	10534	10522	8785	8724	
	✓ 210	8785	8842	10534	10522	
	✓ 211	"	"	"	"	
	✓ 212	10534	10522	8785	8842	
AC Gr A	✓ 213	8785	8724	10534	10522	
	✓ 214	10534	10522	8785	8724	
	215	8785		10534	10522	
	✓ 216	10534		8785		

Old Variables found 117

CDB 4

Published 26

HHP A 14

B 50

C 23

Bright

Faint

10365

~~med 10249~~ ft 10249

10249

10249

9816, 11844

med 10249, m 3 9828, 10284

A13996

8824, 9816, A5335

A3622

10249, A5555

10579

med 9828 A9061, 10249, 10271

A8335

8842, A9061, A13996

8842, 10271

A13996, 10249

9828, 10146

9828, 10146, 13287

8673

Contact of		NH	Bright		Faint		
MF 8785	?	A 132	8724		8785	8842	
MF 8724							
V11535	7370	✓ B0377	8724	8673	8785		
531 Sq		✓ O 378	8785		8724	8673	
Surp		✓ 379	8785		8724	8673	
5786	7239	✓ O 380	8724		ms 8785		
defect		381	"	8842	8785		
3805	7258	✓ O 382	"	"	"		
no variation		383	8785	8842	8724		
EF CrA		✓ 384	8785	"	"	8673	
418 Sco		✓ O 385	"	"	"	"	
JXGA	7275	✓ O 386	8724		8785	8673	
							<i>variable</i>
		C 217	8724	8842	8785	8673	
	✓	218	"	"	"		
	✓	219	8785	"	8724	8673	
	✓	220	"	"	"	"	
		221	8724		8785	8673	
10502 V 547 Sco	✓	222	8785		8724	8673	
est 10482 V 580 Sco		223	8785	8673	8724	8842	
		224	"	8842	"		

Old variables 99

CDB 2 Published 21 NMS A, O, B 39, C 27

Bright

Faint

CLUSTER	8842, 10249	10522, 10579	—
LONG	10522, 10146	8842, 9816, 10249, 8673	100.5
	10249	" , 10522	
CLUSTER	A13996, 9816 med 8673, 8842 A 5555		—
	10522 dark -		
	11243, 10249 defect of A 5555		
SHORT	10249, 11844	13287	
	10522, 11844, 10146, 13287		
LONG	A13996	A 5555	238.5
		med 9061, 11243, 10249	
LONG			171
IRREG.	10249, 10146, 13287, 10572	10572	

10572
10249, 10146
8673
10249, 13287

med 10579 9816

13287, 9816

9816

A 5522, 11844, 10146, 10572 10249, A 5555, 8673, 13287

13287

med 10146 10522, 11844

10579

8842, 10522, 11844

10249

11243

8673, 10249, 13287

Content of	HA No.	Bright	Faint	
MF 8785	✓ A 133	11743 11718	8785 8842	
MF 11743	def 134	"	"	
	? 135	8785 8842	11743	
	✓ 136	" 8742	" 8842	
	137			
725 Sqr	✓ B 387	8785 11743 11718	8785 8842	
GW Co A	✓ 388	11743 " 8724	8785 " 8842	
	389	8785 8724	11743 11718	
438 Sco	✓ 390	11743 11718	8785 8842	
413 "	✓ 391	" "	" "	
	✓ C 225	11743 11718	8785 8842	
	✓ 226	11743 8842	" 8724	
	✓ 227	" 11718	8785 8842	
	✓ 228	" "	" "	
	✓ 229	8785 8842	11743	
	✓ 230	11743 11718	8785 8842	

red star

Number of old variables 93

CDB 3 Published 20

HA A 17, B 33, C 20

Bright

Faint

10522

10579

10522, 11844

10249, 10579?

11844, 13287?

10579, 10522

10249, 10522, 11844

QUEER

10522, 8673

13287

Cluster

A 13996, A 9061, A 13996

11718, A 5555

0.60410

10249

10579, blurred, 11844

LONA

A 5356, 11662

A 13996, 10522

388.5

LONA

A 13996, A 5622

A 5555

217.4

11662

10522

10284, 10249, 10522, 10579

8673, 13287

8724

11662

10522

10249, 8673, 13287

9816

10522, 10522

Can it be that 120 is due to variation of 229,

10572, 10579

11844, 10146, 8673, 13287

Contact of		HNR No	Bright		Faint		
MF 8785	✓	A 137	9816	9828	8785	8724	
MF 9816							
716 Sgr	✓	B 392	9816	9828	8785	8842	
693 Sgr	✓	393	9816	8842	"	8742	
672 "	✓	394	8785	8842	9816	9828	
defect		395	9816	9828	8785	8842	
HNR No B212		396	"	"	"	"	
7020	✓	397	8785	8724	9816	9828	
VDY C A		398	9816		8785	8724	
surp.	✓	399	"	9828	"	"	
428 Sco	✓	400	"	"	"	8842	
424 Sco	✓	401	"	"	"	"	
415 Sco	✓	402	"		"	"	
		C 231	9816	9828	8785	8842	
		232	8785	8842	9816		
	✓	233	9816		8785		

= 3522

red

about

double

number of variable previously found 103

CDR 5 Published 31

HNR A 9, B 34, C 24

Bright

Faint

11844, 10146, 8673, 13287, 10579

10249

Long 10579

10249, 8673, 10579

277

Cluster A13996, 10249

9828

0.62947

Long 8673

10146, 11844

228

8673 defect of contact

Short 10522, 10572

mid 11844 8673

Cluster

mid 10522 9828, 10522, 10249

0.5812

10249, 11844

10522, 10579, 8673

Irreg 10522, 13287, 10146

8673

Long A13996

A5553

330

Cluster 10572, 8673

10522, 10579

0.62581

10249, 10146

10522

8673

10522, 11705

10146, 13287

10579, 10522

216

contact of	HH No.	Bright		Faint		
MF 8785	A 138	8785	8842	10249		
MF 10249	✓ 139	10249	10240	8785	8842	
	✓ 140	8785	10240	10249		
	✓ 141	10249	10240	8785	8842	
	142	8785	8842	10249		
						20 of d. for near upper cluster
714 Sgr	✓ B 403	10249	10240	8785	8842	
8673 = 7134	✓ 404	10249	"	"	"	
	? 405	"	8724	8785	8842	
varies?	✓ 406	"	10240	"	8842	
						one of several one of per
	✓ C 234	10249		8785	8842	

Number of variables previously found - 115

CDB 3
 published 31
 HH A 18
 B 43
 C 20

Bright

Faint

10240, 10271, 10365, 8673

10579, 10572

9828

10534, 8673

10522

10522, 18842, 10572

10365, 10141

10240, 10534

I R R

10271, 9828

10522, 10365

SHORT

10579, 13287

8724

10522, 10365

10240

8724, 10522

10271

A9061, 10522

8724, 10240

Contact of		HAS	Bright	Faint	
544 Sqz	✓	B 407	A 5555	5622	A 13996
A 5555	✓	408	13996	5555	
A 13996	✓	409	"	"	
543 Sqz	✓	410	5555	13996	
423 Sco	✓	411	"	"	
660 Sqz	✓	412	13996	5555	
623 Sqz	✓	413	"	"	
602 Sqz	✓	414	"	"	
597 Sqz	✓	415	"	5622	"
588 Sqz	✓	416	5555	13996	5622
595 "	✓	417	13996	5555	
7220	✓	418	5555	13996	
599 Sqz	✓	419	13996	2659	5555
✓ GN CrA	✓	420	5555	13996	5622
def. of A 5555		421	13996	5555	
✓ GY CrA	✓	422	"	"	
✓ GV CrA	✓	423	5555	5622	13996
✓ GU "	✓	424	13996	5622	5555
FX CrA	✓	425	5555	12996	2659
GQ "	✓	426	13996	5555	5622
FH CrA	✓	427	"	"	5622
EZ CrA	✓	428	"	"	5622
7110		429	"	2310	"
EM CrA	✓	430	5555	5622	13996
susp	✓	431	13996	5555	
7110 B = 77		432	"	"	5622
✓ FN CrA	✓	433	"	"	5622
7099	✓	434	"	"	
547 Sqz	✓	435	"	"	5622
443 Sco	✓	436	"	"	5622

Bright

Faint

LONG	MF13287	A5622	MF10522	405 ^d
LONG	MF13287	A5622, MF10522		261
ECLIP				59.61
Cepheid	A2713, MF10249, 5673, 10240	A5622, MF10522, 10271, 10146		59.61 24.85 (3 Lyr. type)
LONG	A5622, MF13287	A2659, A2310, MF10522, 10249		235.6
IRREG	MF1904	MF10574, 11844		
	MF10249, 10240, 5673, 10146	A5622, A2310, MF11973		
LONG 413	MF13287	A2310, A5622, MF10522		206.7
Cluster	A2310, MF10522, 10249	A5622, MF10572		0.38533
Eclipsing	A2659, MF10522, 10249, 10572	MF10146, 11662		6.2148
Cluster	MF13287	MF10249		
	5622	A2659, A2310, MF10522		236.4
SHORT!	MF10522, 10249, 13327	MF11844, 11919, 13120		
IRREG	MF10146, 8537	A5622, A2310, A2659, MF10574		
	A5622, A2713, A2310, A2659	11844		
Cluster	MF10572	MF10522, 10271, 11973, 10572		
		A5622, A2310, MF10522, 10249		0.53849
IRREG	MF10249, 10572, 13134	A2310		
IRREG	A9061, 2659, MF10522, 10522	A5622, A2713, MF10522, 11844		
LONG	A5622	A5622, A2713, A2310, MF10146		
Eclipsing	A2310, A9061, MF10522, 10249	MF10522		
SEMI REG	MF10249	A2659, A2713, A2310, A9061		341
LONG	MF11973, 11844, 11919, 10534	A2659, A2713, A2310, A9061		2.0475
Cluster	A2310, 9061, MF10249	A5622, A9061, MF10522		
SHORT	MF10522, 10249, 8842	MF10249		
LONG	MF10522	A2310, A2659, MF10522, 10249		320
	430 A2310	A2659, MF10522, 10249		0.539665
		A2659, MF9816		
		A2659, MF10249		273.5
		10572		
		MF10522, MF10249, MF10249, 13287		
LONG	A2310, MF13287	MF10271		
	MF10146, 10572	2659, MF10522, 10249		242.5
SHORT	A5622, MF10249, 11844	MF10572, 2042		
LONG	MF10146, 10572	MF10572		
Cluster	MF10522, 10572	MF10271, 5672, 13247		0.54923

1929phae.proj.255885

A

5

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✓G

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✓G

✓G

F

G

F

E

E

✓F

(w)

5

4

570
1/20

	1	2	3	4	5	6	7	8	9	10	11	12
	10279 10527	10577 10522	10146 10522	10365 10522	9838 10522	8673 10522	8842 10522	11919 10522	11705 10522	10578 10522	10240 10522	11973 10522
A	36 51	57	70	79	85	89	95	98	109	112	120	126
B	70 119	153	178	222	260	289	310	325	335	345	361	365
C	69 87	104	118	132	153	165	179	183	188	195	205	208
ms	175 154 25	257 154 25	314 154 25	386 154 25	443 154 25	498 154 25	543 154 25	584 154 25	606 154 25	632 154 25	652 154 25	686 154 25
	13 10534 8725	14 8724 8725	15 81743 8725	16 9816 8725	17 10249 8725	18 A13776 5565	19 A14092 5565	20 A5622 5565	21 A2657 5565	22 A4061 5565	23 A11662 20522	24 A11662 20522
A	131	132	136	137	142	142	145	147	149	150	158	158
B	376	386	391	402	406	446	450	473	494	494	498	498
C	216	224	230	233	234	234	234	234	234	234	234	234
st	723 31	742	757	772	782	822	826	849	870	870	874	874
	117	99	93	103	115	64	14	39	65	8	58	58
24	13287 10522											
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 1 \text{ } \cancel{4} \text{ } 80 \\
 24 \overline{) 35} \\
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 110 \\
 \underline{96} \\
 140 \\
 \underline{144}
 \end{array}$$

1465

Poland
 Sweden
 Great Britain
 Canada
 Japan
 Italy
 Dutch

11/

154	175
48	73
34	45
43	293
47	93
65	179
52	
31	
37	254
8	
20	
12	493
13	
8	503
20	
15	443
34	523

175	
72	
23	
57	300
55	350
45	450
477	
119	
318	
357	
95	
350	

$$\begin{array}{r}
 39.0 \\
 477 \\
 190 \\
 30 \\
 60 \\
 324 \\
 32 \\
 477 \\
 218 \\
 654
 \end{array}$$

$$\begin{array}{r}
 1874 \\
 140 \\
 1874 \\
 140 \\
 1874 \\
 140
 \end{array}$$

$$\begin{array}{r}
 324 \\
 32 \\
 477 \\
 218 \\
 654
 \end{array}$$

$$\begin{array}{r}
 4/707 \\
 227 \\
 681
 \end{array}$$

$$\begin{array}{r}
 5/907 \\
 181 \\
 725
 \end{array}$$

$$\begin{array}{r}
 3/907 \\
 302 \\
 604
 \end{array}$$

